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ABSTRACT

This handbook was prepared as a tool to assist U. S. Department of Agriculture (USDA) employees coordinate their resources and efforts to help people improve their environment. Twenty-two projects are outlined as potential environmental thrusts at the community level. It is the role of USDA employees to encourage and assist, in every way possible, as each community develops its own environmental thrusts. Projects are titled: Safe Drinking Water, Sanitary Landfills, Trash and Junk Removal, Sewage Disposal for Farm Home and Rural Community, Animal Waste Disposal, Land Use Planning, Landscape Improvement, Protecting the Landscape, Pesticide Safety, Safeguard Food Quality, Reducing Environmental Degradation by the Marketing System, Disposal of Pesticide Wastes and Containers, Improving Recreational Resources, Improving Rural Housing, Noise Reduction, Controlling Ticks in Recreational Areas, Controlling Poison Ivy--Oak--Sumac, Controlling Aquatic Weeds, Brush Control, Controlling Poisonous Plants, Controlling Ragweed, and Controlling Yellow Jackets in the Western United States. Each project briefly covers the situation and problem, objectives, a possible work plan, criteria for evaluating effectiveness, and available resources, noting both government and nongovernment assistance available. Services of 17 agriculture-related agencies are reviewed at the end. (BL)

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ENVIRONMENTAL THRUST HANDBOOK

U.S. DEPARTMENT OF AGRICULTURE

SE 015 506

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GENERAL AGENCY ASSISTANCE

September 1971

INTRODUCTION

This handbook was prepared as a tool to assist U.S. Department of Agriculture employees to coordinate their resources and efforts to help people improve their environment.

Some 22 projects are outlined as potential environmental thrusts at the community level. They include projects with titles such as Safe Drinking Water, Pesticide Safety, Controlling Ragweed, and Landscape Improvement.

The handbook does not offer a complete list of projects. State and local leaders would be expected to add others they consider appropriate to their communities. Also, others will be added from the national level.

As each community develops its environmental thrusts, it is the role of USDA employees to encourage and assist in every way possible.

In contributing to this handbook, USDA State rural development committees noted that environmental projects are already underway in many communities. It is not the purpose of this handbook to suggest competing projects but rather to encourage those which are already underway and to offer ideas for new and additional ones.

All sources of help and assistance available for improving the environment should be properly incorporated into each environmental thrust project. In this handbook the USDA has outlined its available assistance, which is adaptable to a wide variety of situations. There are also many other sources of government and nongovernment assistance available.

Project outlines also briefly discuss objectives and a possible work plan.

Recognizing that each community is different, the Environmental Thrust Handbook purposely avoids hard and fast rules of operation. Local people must make the key decisions in that area if their projects are to be effective.

With offices in more than 3,000 communities, the U.S. Department of Agriculture stands ready to assist in environmental improvement and in other ways through its traditional services.

ENVIRONMENTAL THRUST OUTLINES

Safe Drinking Water

Situation and problem

Many farms and open-country households, and some rural towns and villages do not have an adequately developed water supply. Typical sources of water for these farms and households are wells, springs, and cisterns. Inadequate sanitary protection methods in the design and construction of wells and other sources of water supply are major contributing factors in causing water pollution. Septic tanks and drainage fields are potential sources of water pollution.

Although farm population is declining throughout the Nation, rural nonfarm population is increasing rapidly in many areas. Inadequate water supply facilities tend to retard the development of rural areas.

The death rate from waterborne diseases of people in rural areas is 16 times that of people in all other portions of the Nation. The fact is that much of the illness of babies and young children, as well as adults, in rural areas and small towns is caused by drinking disease-contaminated water.

The rapid increase in population, misuse of pesticides and fertilizer, and disregard by the general public of the need to preserve the country's water sources have created serious problems of water pollution. This pollution is not confined to streams and lakes or to the point of its introduction, but is carried to other areas, sometimes at considerable distance by surface streams and underground water flow.

Because water may be clear is no assurance that it is safe to drink. Water in nature is seldom free from impurities. Germs or parasites in contaminated water may cause typhoid fever, hepatitis, dysentery, diarrhea, intestinal worms and other maladies.

There are ways to correct this. A new well may be needed or an existing well be properly cleaned and provided with protection from outside contamination. Perhaps a central water system is the answer for a rural community or town.

Objectives

The basic objectives of a local action program on safe drinking water should be a pure and adequate water supply for every household. The following might be specific local objectives:

1. To create an awareness in local people of the quality of water they drink.
2. To stimulate individual households to improve their water supply.
3. To provide information on where to get assistance if a community problem exists.

Plan of work

Suggested steps and procedures which the community might take to accomplish objectives are the following:

1. To test drinking water serving individual households.
2. To survey water supply needs of the community, if warranted by individual household situations.
3. To provide information for people to correct deficiencies.
4. To develop an education and information program on importance of a safe and adequate water system, including health protective measures and treatment for water-caused diseases.
5. To arrange followup investigations of wells and water systems.
6. To investigate sources of financing, if needed, for needs of individual households or communities.
7. To establish program for reporting results.
8. To consider the development of a simplified training program to test household water supplies and to survey water needs in the community.

Criteria for evaluating effectiveness

Criteria for evaluating effectiveness might include–

1. How many contaminated samples were found after the remedial program had been completed?
2. How many individual water sources remain inadequately protected after the improvement program has been completed?
3. What is the reduced incidence of illness due to waterborne diseases?
4. What is the observed awareness of the importance of safe drinking water on the part of the local people?

Available resources

The Farmers Home Administration can provide financial and technical assistance to rural communities and towns of up to 5,500 population to develop

central water systems to assure a supply of safe water. FHA can also encourage rural residents with individual wells to have their water tested for safe drinking purposes and suggest that they be corrected, if found polluted.

The Rural Electrification Administration can assist interested groups of REA borrowers or their Statewide associations in setting up a 2-day training workshop on domestic water supply and treatment. Information materials and visual aids sources are provided on request.

To encourage borrowers to continue their water promotion programs, REA provides periodic roundups of how REA systems are helping individual consumers obtain safe running water, water-using appliances, and sewage disposal systems, and how REA systems help groups organize cooperatives for community water and waste disposal systems.

The Agricultural Research Service, by monitoring cooperative pesticide control programs, can assure that harmful pesticide residues do not enter water supplies as a result of these programs.

Extension Service, through its educational program, can inform rural residents of the types of water systems and the importance of testing, and then refer them to appropriate resources for inspection. Extension, cooperating with other agencies, could develop a guide for measuring change of awareness of a safe water supply.

The Soil Conservation Service can include storage capacity in reservoirs planned in authorized Flood Prevention (PL-566) and RC&D projects to supply safe water for domestic, municipal, and industrial use. Advance of funds is authorized under Public Law 87-703 to pay for storage to meet future anticipated needs. Local sponsors must pay, at the time of construction, all costs allocated to water storage that is provided specifically to satisfy present municipal or industrial needs and agree to repay any advance of funds within a 50-year period.

Also, SCS provides technical assistance to landowners and operators in meeting on-farm safe water supply needs. This includes spring development and construction of farm ponds.

The county rural development committee could be the focal point of leadership and information. Local health department officials are also a source of effective leadership. A wide variety of local groups and concerned individuals should be involved, including 4-H clubs, FFA and adult farmer classes, scout troops, home demonstration clubs, garden clubs, PTA's, local business people, League of Women Voters, and others devoted to community service.

Among such people resources, a committee of concerned leaders could be organized to assist in a remedial action program.

Some of the steps and procedures which the rural development committee might take to accomplish established objectives follow.

1. Sample test drinking water serving individual households.
2. If there are several unfavorable reports from a community test, follow up with a more comprehensive household water supply survey to determine the severity of the problem. Identify water sources and quality problems.
3. Arrange instructions on how to correct well and system deficiencies, and include cost analysis. Such information might be supplied by county or State health departments, college or Extension Service personnel.
4. Inform consumers on the importance of safe water.
5. Arrange for followup inspection of wells and water systems. Health department technicians might do this.
6. Encourage organization of health departments in counties where they do not exist.
7. Involve appropriate people resources.
8. Assist in determining type of water system desired. Where a county central system appears most practical, the committee should:
   a. Determine community interest in a central system.
   b. Arrange feasibility studies.
   c. Assist in creating the necessary organizations for construction, management, and operation.
9. Investigate sources of financing, including FHA, the local PCA, local banks, and other commercial financing organizations.
10. Establish a program of reporting results to State health departments or other State regulatory agencies and the U.S. Department of Agriculture.

Sanitary Landfills

Situation and problem

Disposing of solid waste is a serious problem confronting every household and community. More than 70 percent of the Nation's solid waste is dumped on the land in an unsightly and unsanitary manner. Open and burning dumps are common, contributing to air and water pollution, in addition to providing food, shelter, and breeding grounds for rats, flies, and other disease vectors.

The average American throws away from 5 to 7 pounds of solid waste each day, or over a ton a year. Household, commercial, and municipal wastes are expected to increase from 190 million tons in 1968 to 235 million tons in 1980. The additional 45 million tons would derive from expected increases in population and the increased amount of material an individual will discard.

About one-third of the Nation's population lives in rural areas: open country, unincorporated and incorporated towns and villages with populations of 5,500 or less. In addition to the solid waste these communities discard, waste and refuse from larger nearby cities find their way to rural areas.

The capacity of the environment to absorb waste can be increased immediately and safely by burying refuse in suitable soil areas. This has been one of the traditional uses of the soil dating back to early civilization. The sanitary landfill is a method of burying refuse in soil that reduces nuisances or hazards to public health and safety and contributes less to air and water pollution. The waste buried today is different in composition from that buried years ago. Renovation by the soil is much slower because of kinds of waste and greater volumes; thus, much more care in site selection, design, and management of landfills is required.

Because rural America houses more than half of our Nation's poor, financing adequate waste disposal will be difficult and may be impossible in many areas because of the cost. The tax base is generally low and family incomes are commonly low. Financial assistance is needed.

Sanitary landfills offer the most suitable immediate solution to the disposal of solid waste in the soil. However, the operation of sanitary landfills requires the use of large specialized equipment. Small communities cannot afford this equipment and it would not work at a fraction of its capacity there. By serving a county or other region within reasonable haul distances, the equipment can work at capacity and keep unit costs down.

Objectives

The objectives of a local action program for management of solid wastes by sanitary landfill are:

1. To eliminate health hazards by vector control.
2. To eliminate air pollution from burning trash.
3. To eliminate or reduce water and ground water pollution by selection of appropriate sites and good management.
4. To enhance the esthetic quality of the environment by (1) eliminating unsightly dumps and accumulations of trash and (2) establishing parks, recreation areas, and wildlife habitats on completed landfill sites.

Plan of work

Through the cooperation of local people and appropriate agencies, determine the sources and kinds and amounts of solid waste being produced, the collection and disposal systems required, financing needs, site selection procedure, design requirements, management and operation considerations, and use of the land after filling is complete.

Obtain available loans and grants for solid waste disposal. Groups can apply for financial and technical assistance through government offices in local areas.

Use soil surveys to locate potential areas for sanitary landfills. Use surveys as a basis for designing effective water disposal and suitable plant cover to control erosion and runoff during and after fill operations are completed. Villages, towns, and cities can eliminate costly investigations of unsuitable sites by using the soil survey to select only those soil areas where detailed investigations appear warranted.

Obtain information and educational services available from local sources.

Establish community, county, or regional sanitary landfills. They would service both the rural population and the larger communities in the area. Landfill cooperatives may be useful where political subdivisions are fragmented.

Criteria for evaluating effectiveness

Effectiveness of the program could be determined by surveys of solid waste disposal practices in the small communities.

Available resources

Soil Conservation Service can provide soil surveys:

- ☆ To locate potential landfill areas.
- ☆ As a basis for designing effective erosion control during and after fill operations.

Several State agricultural experiment stations have completed research on sanitary landfills. State Extension Service personnel would have the results as well as other landfill information, including information on licensing and other legal requirements.

The Farmers Home Administration will encourage the development of sanitary landfills and will help as many communities as possible with loans and technical assistance. FHA will recommend that these landfills be attractive as well as useful.

The Agricultural Research Service, in cooperation with the Soil Conservation Service and Extension pesticide specialists, could assist in locating suitable sanitary landfill areas.

Current information from Forest Service studies of waste disposal practices conducted at its equipment development centers can be made available to interested groups.

National forest recreation sites and installations, by disposing of solid wastes at locally operated sanitary landfills, could provide part of the volume and financial support on which a landfill operation depends. In some locations, national forest land can be made available.

Programs related to screening or beautifying sanitary landfill sites could be developed through the Green Thumb or Operation Mainstream programs.

Working through State forestry organizations, local groups could expand efforts to make rural community dumps fire safe.

State forestry agencies and administrators of the Rural Environmental Assistance Program (REAP), cost-sharing on farms, can assist with tree and shrub planting at landfill sites. Fast-growing hybrids are available from some commercial State forester sources.

Forest Service researchers have developed improved recycling systems for paper and wood in refuse. They can help by providing information on the following:

1. Municipalities, associations, clubs, and companies involved in commercial operations, pilot projects, or research in refuse reclamation and recycling.
2. Waste volumes, possible products, and markets.
3. Pertinent legislation and Federal assistance programs. In some cases, the Forest Service can arrange for making and testing paper products from recycled materials and arrange for display of interesting paper and wood recycling exhibits.

Local electric and telephone cooperatives financed by the Rural Electrification Administration could help provide organizational guidance in forming landfill cooperatives.

The Agricultural Stabilization and Conservation Service provides cost-sharing assistance under the Rural Environmental Assistance Program (REAP) for pilot demonstration projects in a limited number of States for building disposal pits for solid waste on farms.

Trash and Junk Removal

Situation and problem

Roadsides are frequently cluttered with bottles, cans, paper, derelict cars, junked machinery, and discarded appliances. Other locations are similarly marred. There may or may not be suitable sanitary landfills conveniently available for disposal.

This trash is an eyesore. It makes roadside maintenance difficult. It may cause accidents and harbor pests and substances toxic to man.

Objectives

1. To make the rural environment—your neighborhood—more attractive.
2. To reduce the danger of broken bottles, containers partially filled with toxic materials, and other possible hazards.
3. To mobilize the various resources of a rural community.
4. To train and motivate adults and young people alike in proper disposal techniques.

Plan of work

The program could be subdivided into units according to talents and interests of the participants. Subdivisions could be the following:

1. Trash collection along roadsides by youth.
2. Training and motivation of school children in proper disposal techniques.
3. Training and motivation of adults in proper disposal techniques.
4. Off-road cleanup campaigns.
   a. Volunteer inspection of farm sites (with owner's permission) by youth teams to evaluate problem and suggest corrective measures—even offering to assist a farmer, for example, in straightening up his machinery and moving junk to a disposal site, or at least into a less noticeable location.
   b. Arrangements for a junk pickup service—hopefully a continuing one. The first haul would be the greatest.
5. Dissemination of information on proper construction of sanitary landfills, particularly on farms.
6. Initiation of a campaign to develop a properly operated community sanitary landfill.
7. Consideration of recycling glass and aluminum containers, or any other material which might be of value, such as junk vehicles and paper.
8. Training. Very little specialized training will be needed other than that necessary for motivation. Youth cleanup crews should be provided training (about one hour) on possible hazards, such as cuts, sprains, toxins, poisonous plants, and traffic.
9. Development of materials. Most materials would be developed locally, but a packet should be prepared at national level that includes items such as sample news of a success story elsewhere, a guide for communicating ideas, USDA and other Federal publications on the subject, and a letter from the Department that would indicate official sanction of the activity. These could be used to enlist USDA employee assistance.

Criteria for evaluating effectiveness

Impact on the environment would come from the program's goal—a clean countryside uncluttered with trash. "Before and after" pictures could provide a means of demonstrating the effectiveness of youth cleanup campaigns. The degree to which the problem does *not* recur in the community will be a measure of the effectiveness of the activity. Local press stories might provide some index of progress.

Available resources

Extension Service can help organize a drive to find markets for shredded junk cars. Bulletins are available on sanitary landfills and disposal pits.

Little local financing may be available to help, but major improvements can be made through youth volunteer efforts.

The county agent's office, as well as a local Federal office or laboratory, could serve as a focal point for action.

Trucks might be loaned by street and highway departments, military units, construction companies, farmers and USDA agencies. The USDA source would require an official driver and that his activity be sanctioned as official business. A qualified driver might volunteer during off-duty hours.

Extension personnel and teachers could be enlisted to train supervisors. Press media can help reach the public.

The program could be divided according to talents.

Youth could collect trash along roads.

School children as well as adults could be motivated in proper disposal techniques.

An off-road cleanup campaign should be considered.

Youth teams could evaluate problems and suggest corrective measures, including their own assistance on farms.

A junk pickup service should be considered.

Information on construction of sanitary landfills, particularly on farms, should be disseminated.

A campaign for a properly operated community sanitary landfill should be started.

Forest Service equipment often can be made available. Disposal sites on national forest land can sometimes be found in abandoned burrow pits and mined areas. Projects for trash and junk removal and general roadside beautification along forest highways, roads, and trails can be developed under the Green Thumb or Operation Mainstream programs.

Service foresters and technicians of State forestry agencies include fire inspections when making checks of timber cuttings.

The dissemination of fire prevention information could be expanded, perhaps in conjunction with the civil defense efforts of USDA.

The Farmers Home Administration will encourage borrowers to remove junk and dilapidated buildings and to work with community groups on cleanup campaigns. FHA is already working with future farmers in cleanup campaigns started through the Building Our American Communities program. (In cooperation with the local chamber of commerce, one FFA chapter in Montana helped arrange for a car shredder to be brought into their community. In a week this machine shredded over 1,200 cars. The FFA was directly responsible for bringing 200 cars to the shredder.)

In some States, the Agricultural Stabilization and Conservation Service provides cost-sharing assistance under the Rural Environmental Assistance Program (REAP) for pilot projects for building disposal pits for solid waste on farms.

The Rural Electrification Administration provides consumer information on electric waste handling equipment, that is, trash compactors, incinerators, disposers, dishwashers, and washers which are useful in cleaning plastic sheeting and bags for reuse.

Local rural electrics conduct consumer information programs on waste handling and support community trash and junk disposal activities. In their newsletters, electric and telephone borrowers publish fire prevention, cleanup, and safety stories. Their Statewide associations or groups of borrowers provide training programs on appliances and help inform consumers who receive their monthly publications.

REA borrowers will be encouraged to set a community example in office grounds landscaping and general tidiness.

The Soil Conservation Service will supply information pertaining to sites for the disposal of solid waste and cooperate with the community in efforts to clean up trash and junk.

The Food and Nutrition Service will intensify its participation in and contribution to trash removal.

FNS has a direct information channel to some 80,000 food service establishments that serve about 25 million lunches, breakfasts, and supplemental meals daily.

- ☆ Fact sheets on disposal with proper environmental considerations have been issued.
- ☆ In workshops and conferences with food service managers, FNS staffs discuss ecological problems of food operations.
- ☆ Instructions to State agencies concerning use of Federal equipment funds will intensify emphasis on cleaning materials used.
- ☆ FNS specialists encourage industry to modify or create food service equipment to comply with the spirit of environmental thrusts.
- ☆ Equipment guides emphasize minimizing pollution.

Environmental implications will be considered in specifications for packages, cans, bags and other containers for distributed food. To the degree possible, container manufacturers will be encouraged along these lines.

Plantings on the grounds of the National Agricultural Library have been developed as a horticultural showcase and could be utilized as an example of improving the environment to be applied to business areas. Community leaders, businessmen, and garden clubs could be made aware of this showcase through the development of a self-guided walking tour.

Local USDA office grounds should be put in order.

Sewage Disposal For Farm Home and Rural Community

Situation and problem

Sixty million people in the United States live in the open country or in small towns or villages of less than 5,500 population. Each day these people require 4.5 billion gallons of water, or an average of 75 gallons each. This water, once used, must be disposed of in either individual or central waste treatment systems.

In 1969, more than 3 million rural families were without central waste treatment facilities. Another 800,000 families were served by facilities that need enlargement or improvement. A study in 1967 indicated that 44,000 rural communities were without central waste treatment systems.

Solving the problems of waste treatment in rural areas is often complicated by factors not present in metropolitan areas. Among these are long distances, smaller tax bases, and restricted access to technical and financial help. Communities on the higher watersheds require more sophisticated treatment, yet offer little employment attraction for skilled operating help.

Objectives

The objectives are the following:

1. Assist the rural population to understand the problems and necessity for meeting established water quality standards.
2. Inform the farm family and rural community as to sources of financial and technical assistance available for the design, installation, and operation of sewage treatment systems.

Plan of work

The plan of work for this program would be divided into units according to the talents, facilities, and authorities of the agencies involved.

1. An intensive informational and educational program to acquaint rural people with the environmental quality problems and the health hazards associated with inadequate sewage treatment.
2. An educational program to inform rural people of the technology available to dispose of human wastes, how to preserve the quality of the environment, how to produce byproducts which can be utilized in the economy, and the costs of employing such technology.
3. Inform rural people about sources of funds for financing the installation of facilities necessary for the proper treatment of sewage.

Criteria for evaluating effectiveness

The effectiveness of the program might be measured by:

1. The increase in the number of persons served by adequate sewage treatment facilities as a result of program assistance.
2. The number of persons or communities seeking assistance.

Available resources

The Farmers Home Administration helps local governments and groups get adequate sewage treatment systems. It helps make them aware of their needs, and provides technical and financial assistance.

FHA also makes loans for septic tanks and drain fields where a central system is not available. New houses built under FHA must have septic tanks and drain fields that are approved by the local health departments. Soils are tested for percolation before loans are made.

The Extension Service offers assistance in explaining problems associated with inadequate sewage treatment and the technology available to help. Extension can help in organization, too.

The Soil Conservation Service offers soil surveys to help locate septic tank sewage disposal fields and sewage lagoons properly.

The Forest Service may be a paying customer in local collection and treatment facilities. Its experience in sewage disposal facilities of a size similar to the size of those in rural communities and farms can be shared with interested parties.

The Forest Service and other USDA agencies can provide specific information about land disposal operations. About 1,500 U.S. communities are applying treated sewage wastes to the land. Guidelines are needed, however.

The Agricultural Research Service can provide information on sewage disposal.

Animal Waste Disposal

Situation and problem

Animal waste problems exist in all States. Agricultural production patterns, marketing, climatic conditions, proximity to population centers and many other factors affect the regional importance of the problem.

Historically, animal wastes were recycled through the soil with a minimum direct release into waters. Animal wastes are valued for their nutrient content and the beneficial effects on crops and soils. The removal of wastes from pens and lots is considered a good management practice that enhanced yields and profits. But with the advent of inexpensive chemical fertilizers, increased farm wages and reduction of labor supplies, animal wastes are not often considered as an economical production input.

Intensive livestock and poultry production systems became common in order to capture economies of scale. But these intensify the waste disposal problem.

The concentration of livestock and poultry, sometimes in close proximity to urban, recreational, and other intensive use areas, causes many conflicts. Among these are odors, insects, rodents, dust, pollution of streams, nitrification of surface and ground water resources, and contributions to eutrophication of surface waters.

Animal wastes, whether from domestic or wild animals, can be purveyors of diseases.

Objectives

The following would be objectives of a local action program for animal waste disposal:

1. To prevent deterioration of air, soil, and water quality by animal wastes.
2. To increase harmonious relationships between animal production enterprises and their neighbors.

Plan of work

Develop information, education, and action programs related to–

1. Disposal of wastes on site.
2. Disposal of wastes off site.
3. Protection of land area for animal production from encroachment by non-sympathetic residents, land holders, and industries.

Criteria for evaluating effectiveness

1. Visual appearance, including condition of crop grown on disposal sites.
2. Olfaction–type and intensity of odors.
3. Physical and chemical measurements.
4. Public reaction and attitudes.

Available resources

The Agricultural Research Service serves as a major source of information on disposal of animal waste, and can help with the promotional and educational aspects of its disposal.

The Extension Service provides educational, organization, and technical assistance in equipment design, facilities, waste disposal systems, legislation, regulations, and ordinances pertinent to handling animal wastes. It also provides a contact for resource personnel in animal waste matters.

The Soil Conservation Service can provide technical assistance in planning, design, and installation of animal waste disposal systems. It can also provide financial assistance in authorized areas.

The Agricultural Stabilization and Conservation Service provides cost-sharing assistance under the Rural Environmental Assistance Program (REAP) in connection with animal waste pollution prevention and abatement practices.

The Farmers Home Administration encourages the placement of feedlots and barns away from roads and homes and recommends that animal waste does not drain into streams. In most cases, farmers that FHA works with can apply animal waste to farmland in such a way that it is not detrimental to the environment.

The Packers and Stockyards Administration deals indirectly with animal waste problems at livestock markets. Costs incurred by the markets in disposing of waste in accordance with sanitation standards are considered in the rate determinations. The agency could initiate a formal action against a market because of waste disposal practices on the grounds that failure to adhere to adequate waste disposal practices would also be a failure to provide adequate marketing services and facilities. This failure potentially could result in issuance of a complaint or reconsideration of the equity of existing charges for marketing services and facilities.

Land Use Planning

Situation and problem

Counties in about three-fourths of the States have enabling legislation in relation to land use planning. Nearly three-fourths of the counties in the United States have been granted zoning powers by State legislatures. A 1968 survey found that 80 percent of the counties within Standard Metropolitan Statistical Areas (SMSA's) had a planning board. but less than half of the 2,645 counties outside SMSA's had one. Within SMSA's, 49 percent of the counties had a zoning ordinance, but only 19 percent outside SMSA's had adopted one.

As these data suggest, the major problem may not be so much the deficiencies of present enabling legislation or local ordinances, but rather the failure to exercise the delegated authority. The failure to act in this area is in large measure the result of negative public attitudes, especially strong in rural areas, toward planning and land use regulations. The current concern over environmental problems offers an opportunity, through a broadened educational thrust, to further demonstrate the need for local land use plans and, in most cases, regulation. For example, some type of land use plan may be essential to meet future air and water quality standards and perhaps also noise standards. As land is increasingly used as a waste "sink," the need may develop for land quality standards. These are problems which rural as well as urban communities will face.

For those local communities that have engaged in planning, zoning, or building regulation activities, the 1968 survey found that only 20 percent of the counties outside SMSA's have any full-time professional or technical employees. And nearly half of these employees are engaged on a part-time basis.

These statistics suggest a second major area for this Environmental Thrust: accelerated technical assistance to local land use planners and to State, regional, multicounty, or other public land use planning bodies where appropriate. While there are many specific cases where agencies within USDA have served successfully in this role, there is a challenge to do better. In some areas this may mean broadening the base of clientele served by USDA agencies.

Objectives

The following objectives of the action programs in land use planning and regulation should be mutually supporting.

1. To improve the quality of the rural environment through a large-scale effort at public education that emphasizes the need for land use planning and, where appropriate, regulation.
2. To improve the quality of rural land use planning and regulation by developing an accelerated program of technical assistance.

Plan of work

1. Public education: Initially USDA should assess its capability to conduct a major public education program in the area of land use planning and regulation. As a longer term objective, USDA might consider developing a specific program of training for certain of its professionals to implement an expanded thrust in land use planning and regulation.
2. Technical assistance: The specific thrust in providing technical assistance should be to improve USDA capability to deliver information in a form needed by local and other land use planners.

Criteria for evaluating effectiveness

Techniques for evaluating the effectiveness of public education programs could be used.

The effectiveness in delivery of technical assistance could be tested by a periodic sample survey of practicing planners. This could provide feedback which would be useful in determining the need for readjustment in programs.

Available resources

The Soil Conservation Service develops and maintains soil, water, and plant resource information needed for land use planning. It surveys and maintains some resources, and makes inventories needed for developing resource use plans. It provides interpretations of resource facts useful in making land use decisions. SCS helps to develop alternatives for consideration in developing land use plans.

Forest surveys, conducted continuously by the Forest Service, contain statistical information on trends in changes of forest area, composition of forests, health and condition of the trees, rates of growth, and rates that forests are being cut. This information is available by State, and in most cases by counties or groups of counties. State foresters can supply this kind of information, as well as provide advice and assistance on specific land use proposals involving forest lands.

Beneficial provisions of tax laws are frequently tied to preservation of land for open spaces, scenic views, and public access for recreation enjoyment. The Forest Service makes available summaries of State and local laws that affect the way forest and wild lands are appraised and taxed.

Forest Service multiple-use plans and extensive data are available to planning efforts within and adjacent to national forests, along with the participation of Forest Service people interested in coordinated land use planning efforts.

Land use planning is a vital part of river basin programs. Federal, State, and local agencies make investigations of river basins as a basis for coordinating water and related land resource planning. Reports of investigations and surveys serve as a basis for coordination of agricultural, forestry, and other upstream aspects of water and land resource development.

Work under this program provides an appraisal of the water and related land resource problems, including erosion, sedimentation, flooding, agricultural and rural water needs, and non-agricultural water management problems in upstream areas. An assessment is made of the impact of water resource development on the land resource base and solutions sought.

The Extension Service has bulletins on land use planning and zoning. It also can help organize educational programs to involve the people in land use decisions.

The Farmers Home Administration cooperates with planning districts by placing housing and facilities as suggested by comprehensive plans in a district or a town. FHA encourages orderly development through proper land use.

The Agricultural Stabilization and Conservation Service has data available on the farm histories–crops grown and conservation measures established. This may be important on land use planning. ASCS encourages participants under REAP and other programs to develop and utilize farm conservation plans.

Landscape Improvement

Situation and problem

In the rural areas and in many of the suburban areas of the United States, the utilization of landscaping standards has been sadly neglected. It is estimated that less than 1 percent of homes, public and private buildings, roadways, and parks can be classified as being truly landscaped. Less than 10 percent of these facilities would fall into a category of "partially landscaped." Probably 80 percent of the buildings in the United States do have some plantings, but these plantings would have declining quality due to age, disease, insects, and environmental stress. When we compare this development of landscaping in the United States with that in Europe, we find that we are a poor second. The feeling for beauty that many of the emigres brought to the shores of America has been diminished.

Though the Nation's attention has focused more on economic growth, pride in ownership and community has not disappeared. In many regions of rural America, neatly painted, well kept homes and farmsteads appear. This is as much attributed to pride of community as to economic classification.

Objectives

The purpose of this program would be aimed specifically at reawakening across America a pride in home and community appearance.

Plan of work

The program divides itself readily into four areas: campaigns, training, incentives, and recognition.

1. Campaigns: There are currently at least four national weeks to which State and local campaigns could be readily tied. These are (a) Arbor Day, (b) Spring Clean Up, (c) Lawn and Garden Week, and (d) Fire Prevention Week (October). In addition to these national weeks, community and State campaigns could be initiated and aimed at specific local problems.
2. Education: The local groups could sponsor twilight meetings, tours, workshops, and short courses on landscaping, painting, repair, or whatever the local needs and interest would dictate.
3. Incentive: It is proposed that an incentive loan program be established to encourage landscape improvement, painting, and minor repair. It is suggested that this improvement loan be interest-subsidized through a Federal agency.
4. Recognition: A recognition or an awards contest should be established in both the State and national efforts. It is suggested that an environmental excellence award be designed and awarded to those communities and counties attaining the proper score.

Criteria for evaluating effectiveness

Evaluation could be readily obtained through the participation in State awards and national award efforts. This, of course, would be in addition to the visual evaluation of the casual observer.

Available resources

The Soil Conservation Service has information about soils, grasses, legumes, shrubs, and trees. It helps land users develop resource conservation plans that might include wildlife plantings, windbreak plantings, and plantings to screen unsightly areas and control erosion.

The Forest Service lists woody plants that may be grown under various conditions. A separate listing of decorative plants of the Appalachian region is available.

Measures to provide for landscape improvement can be provided through the Small Watershed Program. Forestry assistance in this program deals with work needed to restore and maintain surface-damaged areas associated with such disturbances as forest fires and floods.

In the implementation of this program, the Forest Service cooperates with State forestry organizations in determining watershed conditions, land treatment measures needed, and in an evaluation of such measures.

Recommended measures are installed by the landowners with technical assistance and guidance provided by the Forest Service in cooperation with and through the State foresters.

In its studies of the economics of forest management, the Forest Service collects and analyzes costs of planting trees and various silvicultural operations. This information would be of value to individuals or groups contemplating establishing or improving larger wooded or scenic areas.

The Forest Service can provide information on techniques for the installation of signs and fences. It can help in restoration and revegetation operations in restoring strip mined land to wildlife habitat, forestry, pasture range, farm and forest recreation, cultivation, ponds, and building sites.

Local groups sponsoring workshops and short courses in landscaping in the 700 counties that contain national forests—or have them nearby—may call on Forest Service landscape architects for participation.

Various projects concerned with recreation and park development, improvement, and protection could utilize employees in the Youth Conservation Corps, Neighborhood Youth Corps, Operation Mainstream, and Green Thumb programs.

The Extension Service can provide training opportunities and educational materials for landscape improvement. Short courses and workshops for landscape planning, development, and maintenance can be conducted. Publications, slide sets, and other visual aid materials can be developed. Radio, television, and news articles can be prepared.

The Agricultural Stabilization and Conservation Service may provide cost-sharing under REAP for practices such as the following:

- ☆ Establishing permanent vegetative cover.
- ☆ Maintaining trees for forestry purposes.
- ☆ Using trees or shrubs for windbreaks, shelterbelts, or stabilizing gullies or streambanks.
- ☆ Controlling competitive shrubs.
- ☆ Constructing erosion control dams, pits, or ponds.
- ☆ Constructing terraces, stripcropping, reshaping gullies, and so forth.

The Rural Electrification Administration has included suggestions on projects to improve the attractiveness of home grounds in its planning checklist "How Co-op Women Can Help Secure Environmental Quality." "Checklists to Plan Use of Womanpower in Co-op Member Service Program," is a series which provides co-op employees ideas for women leadership activities among electric consumers served.

The National Agricultural Library (NAL) might sponsor a series of workshops in cooperation with community leaders, garden clubs, scouts, 4-H'ers, and so forth, at NAL. Literature resources and ways they can be used are publicized. Department of Agriculture films also can be shown. The result could be a model program which might be adapted by agency field libraries.

The Farmers Home Administration requires landscaping as well as other practices to maintain the new homes it finances.

Protecting The Landscape

Situation and problem

The erosion of land in its natural state, undisturbed by man's activities, by such processes as weathering and movement of materials by gravity, wind, water, and ice is referred to as normal or geologic erosion. Under natural conditions, the vegetative cover protects the land, and geologic erosion is slow. However, the rate of erosion is accelerated by those actions of man that leave the soil surface exposed to wind and water. Overgrazing grasslands, removing timber by logging, burning, plowing the sod, and bulldozing construction sites for urban and highway development—all are activities that increase runoff with consequent increase in land and streambank erosion. At least 150,000 miles of stream channels have serious erosion problems.

Erosion not only scars the land, but also causes air and water pollution. Each year a billion and a half cubic yards of sediment—the greatest single water pollutant—are deposited in the Nation's major reservoirs. This reduces the water-supply capacity by the quantity needed for 5-½ million persons annually. Agricultural land produces about one-half of the Nation's sediment, but the rate of erosion from construction sites may be 1,000 times that from agricultural land with a sediment delivery of 400 tons per acre per year.

In 1965, over 3 million acres of land had been disturbed by strip and surface mining. More than 2 million needed restorative land treatment. Strip mining has increased rapidly since 1965. Although at least 14 States have laws requiring restoration and other States have some control over surface mining through water-pollution control statutes and other means, much remains to be done in rehabilitating surface-mined land.

Wind erosion affects some 70 million acres of land in the Great Plains, Great Lakes, Pacific Northwest, and Gulf and Atlantic Seaboard regions.

More than 2 million individual farmers, ranchers, and other land users have already voluntarily signed agreements for conservation programs with the Department of Agriculture. These programs affect more than a billion acres.

Objectives

1. To impress everyone with the need to protect all soils from the impact of wind and water. Local news media should be involved.
2. To enhance and widen the actions of local units of USDA agencies in hastening the application of conservation practices to the land in urban as well as rural areas.

Plan of work

Local programs of soil and water conservation would be enhanced.

1. Encourage the enforcement of applicable laws and regulations to encourage the conservation measures on all lands. This will include encouraging farmers to use modern soil and water management systems.
2. Seek out and assist the application of sound soil and water conservation practices to agricultural land that has been converted, or is in the process of being converted, to urban and highway uses. Where possible, use a task force concept in which local builders, home builders associations, public works departments, planning and zoning officials, consulting engineers, and architects are involved.
3. Encourage use of engineering structures such as sediment traps during and after periods of denudation.
4. Encourage developers to provide vegetative cover on denuded sites awaiting construction and to use mulches and diversions around building sites during construction.

This plan demands an increase in research to develop soil and water conservation management systems compatible with today's technology. The hydrologic aspects of water management in urban areas have become increasingly more acute with intensification of urbanization. More information is needed (1) to cope with such problems as providing cover to land undergoing development and (2) to reduce peak flow in small watersheds where land cover is often changed from full vegetative to that of buildings, paved streets, and parking lots.

Criteria for evaluating effectiveness

Effectiveness may be measured by monitoring stream sediment loads and the amount of dust in the air. Estimates of water erosion, by use of the universal soil-loss equation, could be compared from year to year for a given area.

Available resources

The Soil Conservation Service provides technical assistance in developing and carrying out resource conservation plans. Technical assistance includes development and use of soils, water, and related plant and animal resource data and engineering help in the design, layout, and construction of water and erosion control structures. In addition, financial assistance may be available in locally sponsored resource conservation and development and small watershed projects when a community's project plans have been approved for such help.

The Extension Service provides technical information on the management of land and water. Demonstrations are conducted on soil and water conservation practices, often in cooperation with other agencies. New developments in lawn seed and care are provided through the news media and in bulletins and leaflets. Special activities such as consumer fairs provide information on the care of lawns, gardens, and shrubbery as well as soil testing and outdoor living.

The Forest Service can support State and community programs aimed at maintaining and protecting esthetic, air quality, water quality, and soil stabilization values associated with–

1. Natural woodlands (encompassing recreational areas).
2. Urban and suburban forests and parks.
3. Shade trees.
4. Shelterbelts.

Information can be supplied on the nature of insect- and disease-caused injuries.

To aid efforts to reduce the number of forest wildfires, the Forest Service can provide help in getting signs, posters, and radio and television fire-prevention material tailored to reach high-risk persons and children.

It can describe new technology for purposeful, prescribed burning of forest wastes to lessen the danger of escaped wildfire and to minimize smoke around populated areas.

The Forest Service and State foresters can assist communities in drawing up local burning laws. Working with zoning boards and county planners, they can help reduce the rising problem of wildfires caused by building in forested and other rural areas. Planting of fire resistant shrubs and grasses in new developments can be part of the development plans.

The Forest Service also can provide services in establishing windbreaks and shelterbelts.

Forest Service technical and financial assistance is available to communities for protection of trees growing under forest conditions from insects and diseases. Assistance could be provided in areas such as city parks, greenbelts, or similar forest environments.

Specific landscape protection projects could be designed to utilize young people in the Youth Conservation Corps or adults in the Green Thumb and Operation Mainstream programs.

The Farmers Home Administration will help provide landscape protection from wind and water erosion. Farmers will be encouraged to use the best conservation measures. Loans and technical assistance can be provided for these purposes. FHA will work to prevent erosion conditions around water, sewer, and housing construction, where the agency is involved.

The Agricultural Stabilization and Conservation Service provides cost-sharing under REAP for practices which assist in landscape protection. These practices include establishing permanent vegetative cover, constructing erosion control dams, pits, or ponds, planting of trees or shrubs (for windbreaks, shelterbelts, or stabilizing gullies or streambanks), erecting sediment retention structures, and the like.

The Rural Electrification Administration has sent a memorandum on environmental protection and pollution control to all power supply borrowers and distribution borrowers owning steam power plants.

Pesticide Safety[1]

Situation and problem

Fatal accidents attributable to pesticides are estimated at 150-200 annually, and most of these involve small children. Yet there are no recorded instances of deaths attributable to pesticides when used properly and in accordance with the safety precautions specified on the labels. Regardless of the number of accidents, a single preventable death is one too many.

Accidents attributable to carelessness can be overcome by individual and collective action.

Pesticide safety is everyone's responsibility, including the manufacturer, the dealer, the applicator, the purchaser, the user, and those who make pest control recommendations.

Objectives

1. To involve people at the grassroots level in a pesticide safety program which will help them appreciate the complexity of pesticide usage, its benefits, and risks to man and the environment.
2. To reduce accidents attributable to carelessness in the handling, transporting, storage, and use of pesticides.
3. To help improve the environment through more judicious use of pesticides.
4. To encourage people to consider the use of alternative pest control measures, when possible, rather than depending on chemicals as the first line of defense.

Plan of work

The pesticide safety program could be subdivided on the basis of pesticide uses. These could include house and garden uses; farm, forest, and nursery uses; and others. The interest and talents of the participants would determine which area would be selected. Where sufficient interest exists, different groups might undertake all three categories as a coordinated effort.

1. Develop a program and program aids for each user group.
   a. Educational materials
      (1) Literature on subjects such as pesticide safety, safety equipment, calibration guides, use records, storage, use of nurse (supply) tanks, loading and mixing, clean-up procedures, and pest management.
      (2) Certification decals and lapel pins for identification and recognition of individual and farm or home program participants.
      (3) Radio and TV spots, films, filmstrips, color slides, and similar materials.
2. Motivate groups by stimulation at local level through a tour or field day to show scope and extent of problem.
3. Distribute packets of resource materials to State and local organizations. Organizations to be interested in the program include 4-H clubs, FFA, scouts, churches, homemakers clubs, chambers of commerce, sportsmen clubs, civic groups, PTA's, volunteer fire departments, and other local community organizations.
4. Coordinate various activities.

Criteria for evaluating effectiveness

A decline in the number of accidents related to pesticide use would indicate success. Also, evaluation of the effectiveness of the program would be primarily determining the enthusiasm with which the program was accepted and implemented. More tangible measurement would result from the disappearance of certification decals and checklists and the demand for the various other educational materials.

Available resources

The Agricultural Research Service is training environmental quality officers whose concern will include proper selection, use, storage, and disposal of pesticides and disinfectants. They, in turn, will train State and Federal employees.

ARS has already initiated an active pesticide safety program. The Plant Protection Division, through this program, can contribute through the following.

1. Education, particularly in relation to the use of hazardous pesticides, that is, the presently operational ethyl parathion program, and
2. Records of pesticide accidents, analyses of their

[1]The term "pesticide" means (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, weeds, and other forms of plant or animal life or viruses, except viruses on or in living man or other animals; (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

cause, and determinations of actions to prevent repeated accidents, all in cooperation with other agencies.

Pesticide safety will be supported by the recently enacted pest management program. Pest management will enable farmers to use less hazardous materials and reduce the quantities of pesticides used.

The Extension Service can provide educational materials, such as publications, leaflets, slide sets, and films for use in conducting safety programs in all aspects of pesticide usage, such as handling, storing, applying, and mixing. It can arrange for resource persons from educational institutions, State regulatory agencies, and private groups to assist local groups with educational and action programs. It also can assist in organization.

The State pesticide coordinator and Extension specialists in entomology and weed control can provide information.

The Forest Service can help present facts on the use of chemical insecticides. Information could include ground and aerial application methods and equipment as well as the monitoring of effects on organisms. This contribution could be oriented either toward preventing tree losses or toward a pest management program which utilizes several control techniques to protect many land uses.

Entomologists and pathologists with the Forest Service and some State forestry agencies could be available to assist in training in the use of pesticides.

The Soil Conservation Service can provide technical information on herbicides through soil conservation districts.

The Agricultural Stabilization and Conservation Service can stress the safe use of pesticides in counties where a brush or weed control practice is developed or pesticides are used in protecting stored grain.

The Laboratory Services Division of meat and poultry inspection within Consumer and Marketing Service could disseminate information on laboratory techniques, location of State and local laboratories, and the use of pesticides. They already use their facilities to check for residues in animals exposed to pesticides.

The Farmers Home Administration will counsel borrowers on the use of pesticides and other chemicals on the farm.

The National Agricultural Library could prepare short bibliographies to be included in packets of resource materials. Small portable exhibits featuring pesticide safety literature—suitable for display in shop windows, school libraries, and similar places—could be assembled.

Safeguarding Food Quality

Situation and problem

Producers, processors, manufacturers, and distributors of agricultural products spend many millions of dollars each year to provide nutritious and healthful foods for American consumers. USDA studies and the experience of Extension personnel indicate that a great amount of the quality of food products is lost through improper and careless handling in retail food stores, restaurants, and other eating establishments as well as in the home.

Both the appearance and nutritive value of these carefully produced and processed food products are affected. In addition, careless handling of food often results in the development of organisms harmful to health.

Objectives

1. To improve the handling and protection of perishable food products and so-called nonperishable food products that are subject to quality deterioration by developing an understanding of proper food care in the home as well as in stores, restaurants, and other food service establishments.
2. Reduce the spoilage of perishables in transit, in wholesale, in retail, and in the home.

Plan of work

The action divides itself into promotion, training, and recognition.

1. Promotion: A joint promotional effort by industry and government groups emphasizing the handling and protection of perishable food products, other food products, and animal feeds, including pet foods that are subject to quality deterioration. This campaign will be separated into two distinct approaches—one with homemakers and the general public; and the other with retail food stores, restaurants, food service establishments, and others involved in food handling in the marketing process.
2. Training: Local and State groups would sponsor educational programs utilizing home study, meetings, seminars, and self-analysis type assistance for stores and eating establishments. The national leadership will sponsor similar programs with establishments such as national and regional food stores, restaurants, food service groups and organizations.
3. Recognition: Individual homeowners who complete study courses, as well as food stores, restaurants, and food service operations, would be suitably recognized.

Criteria for evaluating effectiveness

Evaluation of this program's effectiveness would be through measuring the success of the awards program and by spot checking retail stores, restaurants, and other food service establishments.

Available resources

The Agricultural Research Service's competence and research in perishable food products can be drawn on to develop promotional and training materials on assembling, transporting, warehousing, retailing, and distributing food.

ARS could develop popular publications and posters on proper care of perishables for distribution to housewives, wholesalers, retailers, restaurateurs, and other handlers. Pocket-size cards on how to store (and ripen) fresh produce could be prepared for distribution at produce counters.

The Extension Service can lead in setting up demonstrations on safety practices in food handling. It could cooperate with ARS and C&MS in developing educational materials on the handling, storage, and protection of foods.

In its consumer information work, the Rural Electrification Administration will increase emphasis on safeguarding food quality in household storage, cooking, and cleaning up, as well as in farm production applications or processes. Some REA borrowers work not only with consumers and schools, but with other institutional and commercial consumers.

Consumer and Marketing Service's fruit and vegetable division could assist in promotion, education and training.

Personnel of C&MS could teach the basic elements of handling perishable food.

In the information activities of the Livestock Division of C&MS, references to meat handling and storage could be emphasized.

Expertise in sanitary practices in the Dairy Division could be integrated into a national effort with such entities as the National Association of Food Chains and individual food chains. Field operations could carry it all the way to the processing and distributing level.

The Food and Nutrition Service will intensify its

participation in and contribution to safeguarding food quality through its direct information channel to some 80,000 food service establishments.

- ☆ FNS specialists encourage industry to modify or create food service equipment to comply with the spirit of environmental thrusts.
- ☆ Over 20 foods in family-size containers are now available for distribution through State and local agencies to some 3.9 million people. Nutritional information is already carried on the labels of these containers. This will be alternated with environmental messages.

Here is a partial list of other resources readily available: Home economics clubs, 4-H clubs, FFA, youth groups, schools, utility companies, refrigeration equipment and maintenance companies, retail food associations, and restaurant associations.

Some of the national associations that will be of help are the National Association of Retail Grocers, National Association of Food Chains, Cooperative Food Distributors of America, National Association of Convenience Stores, National Association of Food and Dairy Equipment Manufacturers, Product Packaging Association, and the Food Packaging Council.

The county office staffs of the Agricultural Stabilization and Conservation Service and the county ASC committees can assist in informing the general public. Precautions are being taken by ASCS in protecting stored grains.

Reducing Environmental Degradation By The Marketing System

Situation and problem

Materials used each year for packaging food produced and consumed in the United States weighs approximately 60 billion pounds and costs about $7 billion. The volume of packaging materials will rise from 51.7 million tons in 1966 to 73.5 million tons in 1976, and disposal costs for packaging materials will rise from $419 million to $595 million.

The assembly point, shipping point, and terminal food markets in the United States are faced with serious problems in eliminating waste as most are now confronted with more restrictive regulations for waste and trash disposal.

A recent survey of terminal markets indicated that for every ton of products received in the market there were 20 pounds of trash and garbage generated. In New York City alone, this amounted to nearly 1,200,000 tons of trash a year.

President Nixon's message on the environment called for two approaches to the problem of packaging waste: (1) making products more destructable, especially containers which are designed for disposal, and (2) reusing and recycling a far greater proportion of waste materials.

Objectives

The purpose is to reduce environmental degradation by the marketing system through an information-education program designed–

1. To reduce the amount of non-edible products sent to urban markets, such as corn husks, outer lettuce leaves and celery stalks, broccoli leaves, bones, and inedible fat on pork, beef, lamb, and poultry.
2. To segregate packaging waste so items can be either recycled or compacted for landfill.
3. To reduce trash and garbage at city markets.
4. To reduce the spoilage of perishables in transit, in wholesale, in retail, and in the home.

Plan of work

Here are several work plans that might be considered.

1. Promotions: National, State, and local promotions could be utilized to make the general public as well as the decision makers of various production and marketing units aware of the environmental problems in marketing. Popular publications and posters could be developed based on more technical bulletins and research data for distribution to housewives, retailers, and wholesalers.
2. Education: The local, State, and national groups could sponsor pilot projects, seminars, meetings to make available information for the adoption of new products and procedures.
3. Incentive: It is proposed that an incentive loan program be established for aiding individual firms and markets in developing new processes for disposing and recycling waste products and trash. Youth programs could also be developed and subsidized.
4. Recognition: A recognition or awards program should be established at both the State and national levels with awards going to communities and firms that make outstanding contributions.

Criteria for evaluating effectiveness

Evaluation of this program will be based on the change in pounds of trash per ton of product shipped into terminal markets; the tonnage of trash recycled into usable products; and the volume of trash used in landfill or disposed of by some other means. Evaluation will also include interior improvements, functional, esthetic, and economic changes.

Available resources

Appropriate personnel of the Agricultural Research Service and ARS research results are available to help with the promotion and education necessary to accomplish the objectives of this project.

Production and marketing specialists of the Extension Service inform producers, processors, and marketers of the latest packaging and disposal practices. Home economists teach consumers.

The Rural Electrification Administration informs its borrowers' home service advisers on new products, procedures, and techniques.

The Food and Nutrition Service will intensify its participation in and contribution to reducing environmental degradation by the marketing system through its direct information channel to some 80,000 food service establishments.

☆ In workshops and conferences with food service

managers, FNS staffs discuss ecological problems of food operations.

- ☆ Over 20 foods in family-size containers are now available for distribution through State and local agencies to some 3.9 million people. Nutritional information is already carried on the labels of these containers. This will be alternated with environmental messages.

Environmental implications will be considered in specifications for packages, cans, bags, and other containers for distributed food. To the degree possible, container manufacturers will be encouraged along these lines.

The Agricultural Stabilization and Conservation Service under the Rural Environmental Assistance Program (REAP) provides cost sharing for pilot projects in a few States for establishing disposal pits for solid waste on farms.

A partial list of other resources that are readily available to the community or county are the following: Cooperatives (production and marketing), youth groups, schools, civic groups, city and county governments, growers associations, market managers, food wholesalers and retailers, restaurants and food service establishments, and home economics clubs.

A partial list of the national associations that would be interested in this program would include fruit and vegetable, livestock, poultry production and processing associations, and various food processing, manufacturing, distribution, and market managers associations. National and regional firms that are members of the above associations would be in a position to provide assistance.

Disposal of Pesticide Wastes and Containers

Situation and problem

Residual pesticides in discarded containers constitute a safety hazard and a source of environmental pollution. Because of this, used containers cannot be disposed of by conventional methods nor should they be permitted to accumulate in any number on the farm or in the home. Yet many farmers have permitted such containers to accumulate. Each year some pesticide accidents result from exposure of humans or animals to pesticides from "empty" containers. Through ignorance or irresponsibility a number of such containers have been "disposed of" in the past by dumping them in sites such as ditches, open dumps, and field margins, where they continue to pose a hazard to human safety and environmental contamination.

Miscalculation of pesticide requirements and the economy and convenience of purchasing large quantities are among the reasons there are nearly always some leftover pesticides at the end of a growing season. Many farms have a number of partially filled containers on hand and they constitute a hazard.

The present accumulation of empty containers and waste pesticides should be disposed of as soon as possible using the best current practices. Users should be made aware of the need to continue to dispose of containers and waste in the future as they accrue.

Objectives

1. To make farmers and other pesticide users aware of the need to properly dispose of waste pesticides and pesticide containers.
2. To dispose of the waste pesticide and containers now accumulated on farms and rural areas as much as feasible.

Plan of work

The disposal program must be subdivided on the basis of types of material to be disposed of. These are light-weight empty containers; reclaimable heavy containers; and waste pesticides. These could all be executed by programs which primarily emphasize the responsibility of the farmer to collect and dispose of materials on his own farm. A fourth program would be required to collect and dispose of empty containers previously dumped on nonfarm areas. This would require a survey of areas which are likely to have such material, and trained groups to collect and dispose of them in a carefully prescribed manner.

The plan of work at the Federal level would be as follows:

1. To develop program aids and suggested programs for disposal of light-weight containers.
2. To develop program aids and suggested programs for disposal of reclaimable containers.
3. To dispose of leftover pesticides.
4. To develop suggested programs for collection and disposal of scattered containers, including a special safety training program.

Criteria for evaluating effectiveness

Suggested methods of evaluating the effectiveness of the program are the following:

1. Gather annual statistics on the number of counties conducting one or more of the cleanup programs.
2. Gather statistics for each county, or for sample counties, showing the proportion of farms participating in drum disposal campaigns.
3. Request youth groups, such as 4-H and FFA, to prepare surveys of the empty container and waste material hazard on their farms.

Available resources

The Extension Service can do the following.

- ☆ Provide information on approved methods for disposing of pesticide containers.
- ☆ Train groups on methods of surveying farms and homes for hazards created through improper disposal of pesticide containers.
- ☆ Assist in organizing campaigns on disposal of containers.
- ☆ Obtain resource persons.

A county Extension office could serve as a focal point for community programs to dispose of waste pesticides and pesticide containers. The work could be undertaken by rural adult groups, but because of potential danger resulting from careless or misinformed action, the work should not be conducted by youth. Appropriate groups would include farm organizations and rural sportsmen's clubs. Youth groups could locate materials, however.

The Agricultural Research Service could list firms willing to claim used pesticide containers.

ARS is training environmental quality officers in the selection, use, storage, and disposal of pesticides and disinfectants. These will train State and Federal employees.

The Agricultural Stabilization and Conservation Service provides cost-sharing assistance under the Rural Environmental Assistance Program (REAP) for pilot projects in some States for disposal pits for solid waste on farms. Leaders must be cautioned on location and structure of disposal pits which will receive pesticide wastes.

Insect and disease control specialists of the Forest Service can provide technical assistance on safe disposal of pesticide wastes and containers. Specialists could help arrange the collection and transportation of wastes and containers to disposal sites, assist in training crews in safe handling and storage of pesticide wastes and containers prior to disposal, and assist in disseminating information.

The Farmers Home Administration will work with borrowers to dispose of pesticide waste and containers in an effective and safe manner.

The Soil Conservation Service can assist in dissemination of information.

Improving Recreational Resources

Situation and problem

More economically independent, better educated, and blessed with more leisure than any previous generation, most Americans today still search for their version of the "good life." For many, this desire focuses on a demand for pleasanter physical surroundings, a healthier environment, and a greater sense of community endeavor.

Properly located open space and natural areas can contribute immeasurably to this goal of a richer world for all citizens, urban or rural. Cities need green and growing areas to counteract the monotony of asphalt and concrete. Rural areas need more recreation resources and services.

Objectives

1. To increase opportunities for recreation in rural communities for both residents and their urban neighbors.
2. To enhance existing recreation resources and develop new ones through wise use of the environmental elements available.
3. To encourage and assist local communities in developing programs which capitalize on the natural environment to enrich recreational, education, and esthetic aspects of living.

Plan of work

Though specific local projects would depend on local needs, a logical subdivision of projects is as follows:

1. Preparation of plans and grant applications for the development of existing open space and the acquisition and development of needed new space in or near the community.
2. Preparation for and efficient use of flood plains for compatible recreation use rather than conflicting residential or industrial development.
3. Development of a model farm in an existing park district. The farm would include livestock and crops and other land uses.
4. Development of gardening projects. This may be done at schools or recreation centers, or separately established where they could provide educational activities for children, therapeutic leisure activity for the elderly, and recreation for others.
5. Establishment of education laboratories.
6. Organization of a tourism development program.

Criteria for evaluating effectiveness

Actions would bring measurable visual appearances, case histories, attitudes of people, improved environmental educational opportunities, and better utilization of community, human, and natural resources. Where recreation activities suitable for fees can be developed, these will provide recreation opportunities for nearby urban population.

Available resources

Technical information on organization of recreation programs and other recreational subject matter is available through many offices of Extension Service. Assistance is available to determine the recreational services needed to organize community planning and to implement those plans.

Bulletins on recreation facilities and services are available.

Extension Service could help in planning for and developing a model farm for recreational purposes. It could also help in the development of a gardening project. Information is available, too, on developing applications for grants in recreation.

Forest Service publications on development of facilities and management of recreation areas are available.

State forestry agencies can assist in tree and shrub planting on newly developed recreational areas. ARS, SCS, and FS tree and shrub selections for problem sites could be utilized in many areas.

State foresters can make regular contacts with campers and other users to reduce the increased risk caused by greater use of forested and other rural areas. Fire prevention materials can be distributed by tourism development organizations.

Where expansion of developed sites in the national forest system—or even their operation and maintenance—is limited, local forest rangers welcome cooperative efforts in the form of contributed work on planned projects. "Honor system," pack-your-own-trash programs have proven effective.

A number of recreation and park projects could be developed between local communities and the Forest Service, utilizing employees in the Youth Conservation Corps, Neighborhood Youth Corps, Job Corps, Operation Mainstream, and Green Thumb programs.

Soil Conservation Service programs can make a major contribution toward meeting the recreational needs of the Nation.

In authorized Flood Prevention (PL-566) and RC&D project areas, SCS may provide technical and financial assistance for planning and installation of water storage in reservoirs and associated facilities for public recreation.

Under the Conservation Operations program, SCS provides technical assistance to landowners interested in developing private income-producing recreation.

Soil surveys and technical assistance in interpreting soil suitability data are available for recreation or park development.

SCS can supply information on plants and their suitability for protective cover and utilitarian use on playgrounds, fields, range sites, roadsides, dams, and on wildlife food and cover.

Some recreational benefits may be derived from several Agricultural Stabilization and Conservation Service practices established under REAP, such as construction of ponds and erosion control dams, and the planting of trees for forestry or shelterbelt purposes. Also, under REAP, cost-sharing is available to farmowners and operators for establishing wildlife-enhancing measures such as food plots, wildlife ponds, and shallow water areas.

The National Agricultural Library is planning to develop some recreational facilities for its staff use. NAL could explore ways and means in which these projected facilities could be made available to the community. As an "educational laboratory," NAL could open more special exhibits to the public.

Improving Rural Housing

Situation and problem

For 22 years, this Nation has had a goal of "a decent home and a suitable living environment for every American," as stated in the Housing Act of 1949 and reiterated by Congress in 1968. The goal is 26 million new and rehabilitated units in 10 years. To achieve this will tax our resources and challenge our ingenuity.

Taking a long range view of the housing needs, the magnitude is even more awesome. By the year 2000, we may have 75 million more people in this country. If we are to adequately house these additional people; upgrade the existing substandard dwellings; replace the homes that would be lost, destroyed, worn out, or abandoned during this 30-year period, we will need to produce an adequate unit every 3 seconds of each working day.

About one-fourth of this 75 million or more people have been proposed for rural America. About one-half of the housing needed in rural areas by the year 2000 will require public financial assistance.

Historically, rural housing in general has been inferior to city housing. This is still true in 1971. Some of the reasons why the quality of rural housing has not kept pace with housing in the cities are cited below.

1. Rural residents, especially the low-income families, lack adequate housing assistance in the form of education, organization, technology or credit.
2. Considerably more attention has been focused on housing needs of urban areas than in rural America.
3. The low levels of income of a high percentage of our farmers and rural residents have limited their capacity to improve their homes.
4. Large-scale developers seldom build for rural residents.
5. Migrants and displaced farm workers create particularly complicated housing problems.
6. A third of the Nation's 19 million elderly live in rural America. A high percentage live in housing that is ill-adapted to their needs.

To answer these housing problems will require that families in rural America have better access to suitable building sites, housing design assistance, economical construction, and suitable housing credit.

Planning, zoning, and building codes should be encouraged.

Objectives

The objective of this plan is to provide an awareness across America that regardless of a rural family's present economic stature, there is possible access to better housing and environment.

Plan of work

The action program will consist of organization, preparation of comprehensive plans, incentive housing education, adoption of reasonable housing construction and design codes, training in housing design codes, training in housing design and construction, and understanding housing credit.

Criteria for evaluating effectiveness

The evaluation may first be measured in numbers of participants. However, the impact of the program may also be measured by the following:

1. Changes in appearances in neighborhoods.
2. Environmental changes in measurable forms, such as reductions in communicable disease, rodent and insect infestations.
3. Economic changes measurable in business and industry and the growth in population.

Available resources

The Farmers Home Administration's housing program is geared to help meet the Nation's housing goal. This fiscal year it will assist some 118,000 families with new or improved housing and it is expected to assist nearly 126,000 in 1972.

The Agricultural Research Service can produce designs and construction techniques that will improve the suitability of housing for people.

Extension Service can help families analyze their housing needs, such as selection, planning, maintenance, and interior design and furnishings.

The Forest Service can help people to improve housing conditions within the community by providing information on low-cost wood homes that have been developed by the Forest Service. Detailed plans are available.

Forest Service publications on wood home construction are available as training aid guides for apprentices and to help in evaluating construction quality.

The Forest Service can show the kind and severity of damage to houses and other structures caused by

subterranean termites, microorganisms, and other organisms. Preventative or remedial control measures can be stressed.

The Rural Electrification Administration encourages its borrowers to work with others in helping to provide suitable housing in their service areas. Cooperatives provide their consumers with planning services relating to electrical and plumbing applications. They also carry on educational-informational activities with individuals and groups to assist them in obtaining suitable housing.

The Soil Conservation Service can provide information and technical assistance in the use of soil surveys in locating soils best suited for building sites and as a basis for designing effective water disposal and plant cover to control erosion during and after construction. Soil surveys provide a basis for zoning and protective land use regulations based on suitable kinds of soil.

Noise Reduction

Situation and problem

Noise levels frequently exceed acceptable levels. An average passenger vehicle produces 70 decibels on the highway; a diesel truck some 90 decibels at a 40-foot distance separation. An exterior noise of 70 decibels can be reduced to a maximum acceptable 45 decibels within a building only by shutting all windows facing the noise source. A preferred interior figure is 35 decibels. Increasing noise has been found to affect a number of human functions. It may result in more errors in performance and slow down in intellectual work. Above 90 decibels, it may be detrimental to hearing, and produce increased pulse rate and irregularities in heart rhythm.

An earth bank or mound is generally judged to be the most effective form of noise barrier. An 11-foot high wall or wall-bank combination can reduce noise by 12 decibels at 60 feet from the vehicle source or by 16 decibels at 100 feet. In spite of a recently stated highway engineering opinion that the noise reduction benefits of plants and plantings "are mostly folklore," current (unpublished) Forest Service-sponsored research at the University of Nebraska suggests that certain types of plantings can be of creditable assistance. Certain tree configurations reduced sound levels by half, while combinations of trees and grass cut noise to one-third compared with readings over equivalent distances of open, hard surface. Additional research on a range of more promising materials, such as holly, Carolina and mountain laurel, bayberry, and Chinese and pfitzer juniper, remains badly needed.

Where space is limited it is likely that a solid wood fence, combined with plantings, would do much to reduce highway noise at considerably less cost than that of a masonry wall.

Objectives

1. To develop an awareness of noise control.
2. To train and motivate people to control noise pollution.
3. Reduce possible health hazards and human inefficiencies related to excessive noise.

Plan of work

1. Alert location organizations, work groups, garden clubs, and property owners to significant aspects of the highway noise problem.
2. Train and motivate school children to develop noise reduction practices, particularly in schools which are situated upon well-traveled highways.
3. Disseminate information on alternative corrective measures, barrier installation, plant materials, and so forth.
4. With volunteer help and perhaps with the assistance of PTA's, youth groups, service clubs, and individuals set up community demonstration projects.
5. Encourage local organizations and newspapers to endorse noise reduction as a part of environmental improvement campaigns and to provide recognition and incentives to groups and individuals making significant contributions.

Criteria for evaluating effectiveness

Programs and their effectiveness will be determined by local situations and by available funds and manpower.

Available resources

State forestry agencies can assist with tree and shrub planting practices known to reduce noise pollution along highways, air fields, industrial complexes, market areas, and so on. Certain fast-growing, genetically improved stock could play a significant role. The results of Forest Service research on noise abatement should be utilized. Research on wind-barrier species may have application on these projects.

Federal technical and financial assistance is available to landowners for protection of trees from forest pests that are grown and managed for noise reduction (for example, trees around rural and urban airports, trees along rights-of-way of congested roads, and trees in urban and rural parks).

Where right-of-way space permits, particular situations may be improved by regrading or planting with public funds, but corrective measures often can be instituted only by highway-adjacent property owners. Consultation and assistance can be provided through Extension Service.

Industry, teachers, PTA groups, youth groups, and so forth may be contacted and advised according to the types of structures or activities involved.

The Extension Service can provide opportunities for training and study as well as discussion of methods and research program reviews on noise reduction methods. Meetings can be conducted by Extension Service.

Publications and visual aid materials based on research studies can be prepared.

The Soil Conservation Service can help identify problems; evaluate such alternatives as earth fills, vegetative barriers or screens; and develop standards and specifications for installing and maintaining measures.

The Farmers Home Administration encourages new homes to be built away from busy highways and other noisy facilities. Where this is not possible, noise barriers such as trees and hedge rows are encouraged.

The Agricultural Stabilization and Conservation Service may provide cost-sharing under Rural Environmental Assistance Program (REAP) for special practices developed for noise pollution abatement. The practice might involve the planting of trees and shrubs on land along highways or near other noise pollution areas. Regular REAP practices for windbreak and shelterbelt plantings will provide some benefit.

Controlling Ticks in Recreational Areas

Situation and problem

Ticks attacking humans or their pet animals are often a serious threat to campers and picnickers in our rural areas. Those regions infected with the Lone Star tick, the American Dog tick, and the Rocky Mountain Wood tick are of particular concern, not only because of the ticks' aggressiveness, but because they are vectors of rickettsial and viral diseases. The public commonly leaves or avoids an area infested with ticks, thus reducing potential business income in these areas and, of course, curtailing the enjoyment of the outdoors.

Objectives

To provide tick-free recreation areas in regions of heavy infestation.

Plan of work

1. To initiate a communitywide publicity and information campaign through schools, civic clubs, and local press.
2. To survey high-use park and picnic areas for ticks and determine type and density of ground cover.
3. To clean excess brush, weeds, and high grass from areas of major use and areas immediately adjacent to trails.
4. To develop a continuing surveillance and maintenance project to last through the tick season.
5. To provide, in extreme situations, for the application of an approved toxicant in the form of a border strip around the margin of the cleared area to be protected. A knowledgeable, local entomologist or a State or USDA consultant could be obtained.

Criteria for evaluating effectiveness

The impact of this program would be measured in the change in the number of recreational areas with a low incidence of ticks. A system of continuing surveillance would be required to ensure control and to alert crews to the need of additional maintenance. Reviews of biweekly reports from tick drag and talks with campers using the area would determine need. Lack of complaints from campers or expressions of satisfaction with the camping area are good criteria of effectiveness.

Available resources

The Extension Service provides educational materials on controlling buildup of undesirable insects and other pests. State specialists collect information from research, regulatory, and teaching programs. This material is adapted locally. Extension offices have such materials as publications, leaflets, slide sets, and articles.

Federal technical and financial assistance is available to forest landowners for the protection of trees from pests in areas set aside for recreation. Through cooperative agreements with the States, Federal and State specialists would be available to landowners for pest identification and to provide recommended methods for controlling forest pests. The Forest Service can also share one-third of pest suppression costs on those projects supported by adequate biological, cost-benefit, and environmental evaluations.

Civic clubs could accept these programs as projects and invest small sums of money plus a great deal of advertising and leadership in initiating specific projects. Highway and park departments could furnish equipment, as well as assume greater responsibility for brush and grass cutting on lands for which they are responsible.

To further the efforts of the Environmental Thrust, the Agricultural Research Service could work closely with the States and other government agencies, particularly the National Park Service, to assure that recreational areas and other areas frequented by the public are kept free of pests.

Controlling Poison Ivy, Poison Oak, And Poison Sumac

Situation and problem

Poison ivy, poison oak, and poison sumac cause nearly 2 million cases of skin poisoning and other skin irritations annually, for an estimated loss of 330,000 working days. These poisonous plants pose particular hazards when they occur around home sites, in playgrounds, camping and bivouac areas, picnic sites, along stream and lake banks, and along trails. Many poisoning cases could be prevented if children and others were taught to recognize and avoid the plants. Dogs and livestock who frequent plant-infested areas often carry the toxins on their hair and expose children and others who handle them. Unsuspecting persons are sometimes severely poisoned by contact with smoke produced by burning these plants. Poisoning can also result from contact with the vines during the winter, when no leaves are present and recognition is more difficult.

Many campers, boy scouts, and military troops are poisoned when they must occupy or use areas infested with poison ivy, poison oak, and poison sumac. One or more of these plants occur in each State, and they are frequently unrecognized.

Objectives

1. To eliminate or reduce health hazards caused by poison ivy, poison oak, or poison sumac occurring in areas frequently used by people, and to reduce time lost from work because of illness from poisoning.
2. To reduce expenditures for the drugs and medications commonly used to prevent or alleviate skin poisoning by these plants.
3. To increase the utility and accessibility of recreational sites.

Plan of work

Citizens would be taught to recognize the poisonous plants at different stages of growth. Infestations posing the greatest threat to citizens in the community would be mapped. Effective control is possible. The safest and most effective measures, including use of mechanical and herbicidal techniques and biological control, could be used.

Groups such as citizen groups, youth groups, and civic organizations could launch an identification program so that people could learn to recognize poison ivy, poison oak, and poison sumac. After learning to identify the plants, control measures could be instituted. This type program would be effective in vacant lots and roadsides in suburban subdivisions. Poison ivy, poison oak, and poison sumac in these areas contribute significantly to the number of skin poisoning cases. Local publicity programs could relieve this situation. Similar programs would apply for ragweed and other plants.

Criteria for evaluating effectiveness

Reduction of infestations can be determined by surveys. The reduction in skin poisoning cases would be determined by canvassing local physicians, school nurses, and public health departments. Local druggists would be canvassed to determine relative extent of sales of medications for poisonings by these plants before and after the program. Determinations would be made of the acreage of areas cleared of the poisonous plants to permit camping, picnicking, and other recreational uses.

Available resources

The Extension Service has visual and written materials on hand locally to help identify poison ivy, poison oak, and poison sumac, and to describe controls. In addition, it can help organize educational programs to implement community efforts.

The Soil Conservation Service can provide technical assistance to help–

- ☆ Identify poison ivy, poison oak, and poison sumac.
- ☆ Develop standards and specifications for control, as well as the land management measures needed to maintain control.

The Agricultural Stabilization and Conservation Service staffs can assist in the distribution of informational material and in lending personal support to the program. Under REAP, cost-sharing assistance may be available in some counties for measures to control competitive shrubs, such as poison oak and poison sumac.

Farmers Home Administration borrowers will be urged to control poison ivy, poison oak, and poison sumac.

Controlling Aquatic Weeds

Situation and problem

Many recreational bodies of water are converted by aquatic weed growth into stagnant and useless marshes. Floating weeds and rooted submerged weeds are especially troublesome. In streams and canals they interfere with navigation, clog pumps and structures, and cause damage through flooding and washouts. Aquatic weeds in farm ponds and shallow areas of lakes and reservoirs reduce their utility for storing water, irrigating fields, generating electric power, and producing fish. Weeds interfere with boating, fishing, swimming, and water skiing. They impede access to bodies of water and provide breeding places for insects. Aquatic weeds are becoming critical problems because of the expanded use and development of lakes, manmade ponds, rivers, and irrigation channels.

Aquatic environments in the United States embrace an area of approximately 66,000 square miles, excluding tidal areas. The potential area for rooted, nonfloating aquatics includes those areas covered with less than 10 feet of water. So-called manageable fresh water areas include ponds and small lakes (2 million acres), large impoundments (19.5 million acres), irrigation canals (over 170,000 linear miles), and drainage channels (about 190,000 linear miles).

Approximately 150 species of vascular aquatic plants are known to interfere with water resource use and management. In addition, more than 250 species of algae are important weeds in lakes, reservoirs, ponds, and streams. Major groups of aquatic weeds based on shape, size, and growth habits include algae, including planktonic and filamentous forms; submerged plants; emersed and marginal plants; and floating plants.

While planktonic algae are generally beneficial in surface waters, an overabundance may be undesirable for many domestic and commercial water uses. Phytoplanktonic blooms often result in excessive quantities of organic matter that may deplete the water of oxygen, cause the loss of fish and other aquatic wildlife, and lead to overenrichment or eutrophication of the water. Planktonic algae, in general, do not interfere with the use of surface waters for irrigation purposes. However, the scumforming blue-green algae interfere with growing rice and clog water filters.

Most blue-green algae, and many green algae, produce odors and scum that make water unfit for drinking or swimming, and some may be allergenic to swimmers. A few species of algae have been blamed for causing gastric disturbances in persons drinking the water.

Objectives

The objective is to enlist community effort in determining the cause of the aquatic weed problem, the species of weeds involved, and to plan the steps required to correct the aquatic weed problem.

Plan of work

A cooperative community effort is needed to deal with most such aquatic weed problems. The cause of the weed problem must be identified and corrected, and the methods of controlling the weeds selected and implemented. Methods of control include management practices which reduce the nutrient levels in the water; fluctuation of the water depth; mechanical control, including draglines and underwater mowers; and the application of herbicides which have been registered as safe for such use and biological control. These programs will require assistance from experts and cooperative community action.

Criteria for evaluating effectiveness

1. Testing water for reduced nutrient levels.
2. Improved odor and taste of water.
3. Reduction in number of weeds.
4. Increased utility of the water for fishing, skiing, irrigation, and so forth.

Available resources

The Extension Service has bulletins available on control of aquatic weeds that may be available locally. Many States have wildlife management specialists and agricultural engineers who can prepare educational materials and help in other ways.

The Soil Conservation Service can provide technical assistance in identifying water weeds and their problems and developing standards and specifications for their control.

The Corps of Engineers is already working with a number of States on controlling aquatic weeds. County Agricultural Stabilization and Conservation Service committees are assisting this program by assuring that excessive nutrients are not being applied under REAP–cost-sharing is limited to minimum needs. Also, some indirect benefits are obtained under REAP practices for water conservation.

Brush Control

Situation and problem

Brush dominates an estimated 320 million acres of grazing land. Specific problem areas include 70 million acres of mesquite, 75 million acres of juniper, and 96 million acres of sagebrush. In Texas, the least abundant brush species infest 275,000 acres and the most abundant 56 million acres. In this State, 82 percent of the grazing lands, or some 88 million acres, is infested with brush, and 78 million acres show an attendant reduction in grass production. The 10 million acres too lightly infested to affect forage production can be expected to deteriorate quickly in the absence of effective brush control measures. The monumental brush problem in Texas is repeated in many Western States. Brush is also a serious problem in many parts of the Eastern United States, especially in the southeastern region and in the northern portion of the North Central States. It is estimated that the annual spread of brush exceeds the more than 2 million acres on which brush control measures are applied each year.

Brush invasion is responsible for the loss of grazing lands that, in the past, have made a significant contribution to the maintenance of domestic livestock. It is less well appreciated that brush invasion on grasslands can increase the cost of handling livestock, reduce calf crops, increase parasite damage, and require the use of more breeding males. Losses to rural communities are measured in lower incomes, declining opportunities, and consolidation of operations that have become marginal.

In arid and semiarid regions the spread of brush has dramatically affected the quality of the environment. Brush invasion destroys associated grasses and exposes soil to serious wind and water erosion. Soil movement intensifies sedimentation problems in reservoirs, blocks highways, and causes serious discomfort in rural and urban areas alike. Sand dunes may develop in some brush-infested areas, adding substantially to the degradation of grazing potential. Furthermore, deep-rooted, woody plants reduce ground water supplies that are urgently needed in the further development of arid and semiarid regions.

Certain brush species provide browse for wildlife, but thick impenetrable stands of brush and solid forest cover have a depressing effect on many species of wildlife. Thick stands of brush can reduce the recreational value of land in both humid and arid regions.

Extensive areas of brushland in the Western States constitute a serious fire hazard. Wildfires in these areas during extreme burning conditions can cover large acreages before they are brought under control. Wildfires endanger the lives of humans and reduce wildlife populations. They are responsible for the loss of property, air pollution, and serious soil erosion preceding the establishment of new vegetation.

Brush control is a complex problem that demands participation from interested and committed citizens. The ultimate goal should be improved understanding of brush problems, well-planned brush control programs, and restoration of balance in our grassland communities.

There are many misconceptions regarding the use of chemicals in brush control. Community action programs must be based on the use of *all* available technology, with proper attention to safety factors.

Objectives

1. To provide needed information on brush problems at the community level.
2. To provide a central thrust by means of local demonstration projects.
3. To provide a total brush control package that will attract the communities' support and participation.
4. To integrate all proposals for community action with other strategic programs, especially those in landscape protection.

Plan of work

1. To develop a complete analysis of local brush problems as they affect the quality of the environment, proper land use, recreational values, and safety.
2. To assemble available information applicable to local brush control problems and identify needs where technology is not available.
3. To identify specific areas where community action could be focused in support of brush control. This could be a park or some other readily defined area.
4. To integrate all proposals for community action with other strategic programs, especially those in landscape protection.

Criteria for evaluating effectiveness

The analysis of local brush problems should be completed within the first year, and at least one significant demonstration test established by the end of

the second year. The overall effectiveness of the proposal would be evaluated by the amount of brush control work implemented by local landowners during a 5-year period.

Available resources

The Extension Service has educational material on brush control and is often involved with other agencies concerned with brush control. Demonstrations of control could be developed as well as educational tours.

The Rural Electrification Administration provides technical assistance in brush control to its borrowers because satisfactory operation of electric and telephone systems requires such control. In turn, borrowers experienced in brush control can assist communities by providing technical assistance at the local level.

Agricultural Stabilization and Conservation Service county committees and staffs can assist in the distribution of informational material and the development of a county control plan—especially in relation to cost-sharing under REAP. Under REAP, cost-sharing assistance may be available in some counties to control brush. Special projects and polling agreements should be encouraged.

The Soil Conservation Service can provide technical assistance in identifying brush species and problems, in developing standards for alternate control, and in evaluating alternate control methods.

The Forest Service can work with private landowners to reduce brush concentrations. There is a Greenspan program in southern California devoted to making homes safe from brush fires. Brush disposal can aid in reducing the extreme hazard to lives and property.

The Forest Service is cooperating with many States which currently have active programs to remove flammable brush from around dwellings. These cooperative programs could be expanded in many other States which do not have active programs. This thrust idea also could be coordinated with water-saving and increased grazing objectives. Local projects could be developed to utilize the Green Thumb or Operation Mainstream programs.

The Agricultural Research Service could provide technical direction and guidance to land management agencies conducting large-scale brush control projects.

Farmers Home Administration borrowers will be encouraged to carry on effective brush control measures. Both technical and financial assistance are provided. Borrowers are also encouraged to join neighbors in a brush control program.

Controlling Poisonous Plants

Situation and problem

Poisoning from eating plants and plant parts occurs in both man and animals, whereas poisoning from contact with poisonous plants is common only in man. Poisonous plants kill an estimated 3 to 5 percent of cattle, sheep, and horses grazing western ranges. Significant numbers of animals are poisoned in the more humid areas of the United States, but the losses are less well documented. Many of the poisonous plants, such as waterhemlock, Dutchman's breeches, low larkspur, and cocklebur sprouts cause trouble mainly in the spring. The hazard of poisoning depends on the plant's level of toxicity, its abundance, and attractiveness to the grazing animals.

Man may be poisoned directly by eating plant parts, such as castorbeans and jimsonweed, or indirectly as in milk sickness when he consumes milk from cows poisoned by white snakeroot. The number of humans poisoned is not well established, but one estimate is that 75,000 are poisoned annually. The parts of a number of household plants and ornamentals can cause poisoning if eaten. Children are particularly vulnerable to placing parts of poisonous plants in the mouth and swallowing them, but adults are more often poisoned by the use of "therapeutic teas" or homeopathic medicines from dangerous sources and the mistaken use of "greens" or herbs from poisonous wild plants.

More cattle are killed in the West by tall larkspurs than any other poisonous weed. Authenticated losses on one grazing allotment on U.S. Forest Service land in Utah ranged from 2 to 12 percent in a 10-year period. Tall larkspurs grow at elevations of 6,000 to 11,000 feet either in open meadows or among aspen and fir where snowdrifts accumulate.

Poisonous plants tend to localize within their geographical range. These localized infestations may be given special treatment, or livestock may be prevented from grazing areas where poisonous plants are low in palatability and become hazardous only when forage is scarce. Others are quite palatable, and a few, such as locoweeds, may be habit-forming to livestock and sought by them.

Objectives

1. To engage community action to learn if serious poisonous weeds are problems and learn to identify plants and their habitats.
2. To decide (a) whether a solution to the problem is practical, (b) what methods of control are practical, and (c) how recurrence of the poisonous weeds can be prevented.

Plan of work

Communities will be encouraged to seek the assistance of local specialists in identifying the more important poisonous species in their community and in evaluating the magnitude of their problem. Educational programs would be launched when appropriate to acquaint citizens with plants hazardous to man and domestic animals. Procure available publications and expert advice on methods of dealing with the problem which may include methods of avoiding the hazard of poisoning, chemical and biological; methods of control; and methods of preventing reinfestation.

Criteria for evaluating effectiveness

The program will be evaluated in terms of the specific items listed under plan of work. The analysis of local poisonous plant problems should be completed within the first year, and at least one significant demonstration test established by the end of the second year. The overall effectiveness of the proposal would be evaluated by the amount of poisonous plant control work implemented by local landowners during a 5-year period.

Available resources

The Extension Service has material on identification of poisonous plants. It can also help provide educational programs on identification and control as well as assistance in organization of the community.

The Soil Conservation Service can provide technical assistance in identifying and controlling poisonous plants.

Agricultural Stabilization and Conservation Service county committees and staffs can help distribute informational material and lend personal support to a program. Weed control is not available as a national practice under REAP for 1971. However, in some counties, weed control may be available as a special practice for sharing the cost of eradication.

Farmers Home Administration borrowers will be encouraged to control poisonous plants.

Controlling Ragweed

Situation and problem

Ragweeds produce pollens that cause allergies which reduce working efficiency, impair health, and increase medical costs. Allergies from weed pollens cause an estimated 12½ million cases of asthma and hay fever, or both. Of these, about 5 million are asthma sufferers and about 75 percent become ill because of the weed pollens in the air they breathe. About 10 1/3 million workdays are lost each year at a cost of $125 million in services.

Ragweeds produce allergenic pollens which cause air pollution through global recycling. The pollens travel tremendous distances, but the highest incidence of ragweed pollens is near the fields and other areas which are heavily infested. Control of ragweeds would have a major impact on improving environmental quality by reducing air pollution, reducing losses in agriculture production, and reducing a major cause of hay fever and other respiratory ailments.

Common ragweed and related species infest about 500 million acres of cropland, pastures, and noncrop lands. One or more species of ragweed occur in every State. Ragweeds are among the most common weeds on noncrop lands, and rank as the fifth most serious weed in field and vegetable crops. There are three main species of ragweed. Two species, common and giant ragweeds, are annual plants, and one, western ragweed, is a perennial. The most prevalent is common ragweed which occurs in all of the 48 contiguous States. Giant ragweed is also widely distributed, but it is not a problem along the Pacific Coast nor in Utah, Nevada, and Arizona. Western ragweed occurs principally west of the Mississippi River, but infestations are found in the Upper Midwest and in the Northeastern United States.

Ragweed is one of the most important limiting factors in establishing stands of soil conserving legumes that are underseeded in 36 million acres of cereal crops in the Central United States. The loss of these stands of legumes impairs soil fertility in these areas.

Objectives

The objectives of a local action program on the control of common ragweed and other ragweed species are the following:

1. To eliminate or reduce health hazards caused by ragweed pollens and time lost from work.
2. To reduce expenditures for the drugs commonly used to alleviate hay fever suffering.
3. To reduce losses in crop production.
4. To prevent deterioration of soil fertility by curbing the loss of soil-conserving legumes underseeded in cereal crops.
5. To improve general appearance of countryside and communities.

Plan of work

Community action and cooperative programs encompassing relatively large areas are necessary for progress. Ragweeds and related species would be controlled by ecological, biological, and chemical methods after combined. Emphasis would be given to the most effective and safest methods to control ragweeds. Special attention would be given to controlling the weed in areas surrounding population centers.

Citizen groups, youth groups, civic organizations, and similar groups could launch an identification program so that people could learn to recognize ragweed. After learning to identify the plants, control measures could be instituted. This type program would be effective in vacant lots and roadsides in suburban subdivisions. Ragweed in these areas contribute significantly to the pollen count. Local publicity programs could relieve this situation. Similar programs would apply for poison ivy and other plants.

Criteria for evaluating effectiveness

Effectiveness would be evaluated through pollen counts before and after control operations. The records of local physicians and health departments could reveal changes in pollen counts and the numbers of annual cases of hay fever and other respiratory ailments.

Available resources

The Extension Services often can provide information on the identification of ragweed and on plans for control. Several have bulletins on ragweed control.

The Soil Conservation Service can provide technical assistance in identifying ragweed and developing standards for control.

The Agricultural Stabilization and Conservation Service, under REAP, provides cost-sharing for weed control measures in some counties. (Weed control, however, is not approved as a national practice.) Weed control is required on set-aside and long-term land use adjustment program acreages.

Borrowers from Farmers Home Administration will

be encouraged to implement a ragweed control program. They also will be urged to control any other plants that are detrimental.

With a few specific exceptions, such as halogeton, USDA has no authorization to become involved in weed control except on land which it manages. More than 20 States have weed laws, but in many instances they merely authorize local weed districts and do not provide for Statewide coverage. Some States have programs in which the State is authorized to act if the local authorities do not take action. These laws apply to specific weeds which have been declared noxious by statute or by regulation.

Usually noxious weeds are those which can cause economic loss to farmers. States are often reluctant to become involved in controlling weeds, such as ragweed, which are not considered detrimental to the farm economy. In most States, responsibility for weed control is assigned to State departments of agriculture.

There would need to be assurance that herbicides, if used in weed control, are properly applied. Thus, licensed applicators will need to be used in many cases.

Controlling Yellow Jackets in the Western United States

Situation and problem

Many people are sensitive to insect stings, and for those who are highly sensitive, even a single sting can be fatal. For example, in the United States from 1950 through 1959, of the 460 deaths from venomous "animals," 230 were from stings by yellow jackets and their close relatives.

In many areas of the country, but especially in the Western States, yellow jackets are of special concern in summer and fall. They interfere with and often prevent the picking of fruit in orchards. They are often annoying in camps and at other outdoor gatherings. Many recreational areas, such as roadside parks and picnic sites, are not used to their full potential due to the presence of yellow jackets.

Objectives

The aim of this control effort would be to rid highly infested recreation areas of the hazard of yellow jackets, or to appreciably reduce their incidence.

Plan of work

1. To survey areas that would need protection from the yellow jacket.
2. To place baited traps at strategic locations in areas to be protected.
3. To service traps on a scheduled basis.
4. To initiate a training program for volunteer workers to make them familiar with the trap, how it works, and how it is to be serviced.
5. To initiate a publicity campaign informing the community of what is being done, how it is being done, and what the benefits will be from this work.

Criteria for evaluating effectiveness

The impact of this program would be measured in the number of recreation areas free of yellow jackets. A good monitoring system would be essential to ensure that the trap placements are correct and that sufficient traps are placed around the recreational areas. Bi-weekly visual inspections of these sites would determine whether the yellow jacket population is going up, down, or has been eliminated.

Available resources

Guidance could be provided by the county Extension Service, with technical backing from the State.

The Agricultural Research Service would offer expertise in the use and application of traps.

Nearly all the labor could be recruited through volunteer efforts. Community groups, such as 4-H, FFA, Boy's Clubs, Boy Scouts, and church groups, could be mobilized.

GENERAL AGENCY ASSISTANCE

Because so many aspects of our environment overlap, the kinds of assistance may overlap. Some of the more important forms of agency assistance resist categorization. They are listed in this general chapter.

Agricultural Research Service

The Agricultural Research Service will contribute by doing the following:

1. Direct administrators of ARS research and regulatory stations to contact local rural development committees to offer ARS participation in local environmental thrust programs. They will offer research results and professional knowledge to support the promotional, educational, and training activities planned to implement these programs. Also, they will offer to undertake research that will help meet environmental thrust objectives.
2. Direct station administrators to participate in environmental thrusts appropriate to the community and their station's capabilities.
3. Direct station administrators to make environmental improvements on station grounds to reflect ARS participation in the overall community effort.
4. Authorize participation of each research and regulatory station in community environmental thrust as follows:
   a. Provide technical assistance to local programs by station personnel.
   b. Commit the use of 1 man-day per month, with necessary equipment, at stations of 25 employees or less.
   c. At stations of more than 25 employees, commit the use of ARS personnel at the rate of 1 man-day per month for each 25 employees, to include use of necessary equipment.

Directives to the field stations will be made through the normal ARS channels. Background material on the program thrusts would accompany the directive so the stations will know how to proceed.

ARS will encourage all personnel, as responsible citizens, to take the lead and initiative in organizing programs to improve the community environment.

Agricultural Stabilization and Conservation Service

The Agricultural Stabilization and Conservation (ASC) committee system serves in every agricultural county and community in the 50 States. There are more than 3,000 county committees and about 30,000 community committees (each with three members and two alternates). The county Extension agent is an ex-officio member of the county committee. These committeemen, elected by their farmer neighbors, are farmers who have contact with county landowners and operators, agriculture related businesses, leaders of local and State organizations and government agencies.

The ASC county and State committees and staffs can encourage environmental thrusts by furnishing information. They can join others in informational, demonstrational, and educational efforts on environmental problems and their solutions.

ASCS program assistance to farmers often can be related to locally developed resource program projects such as Small Watershed, woodland improvement, wildlife habitat, and Resource Conservation and Development projects. They often can be related to supervised agricultural credit programs and to special program projects which will further community and national environmental goals.

The ASCS resources include cost-share payments for soil, water, woodland, wildlife, and pollution abatement practices under the Rural Environmental Assistance Program. These may be used as incentives to carrying out certain of the proposed environmental thrust projects.

Consumer and Marketing Service

The Consumer and Marketing Service will insert a brief environmental thrust statement, planned and developed by the Department, in the monthly Plentiful Foods bulletin. This bulletin is sent directly to the heads of most of the largest food service and distributing trade organizations. A followup will be made by field staff through personal calls on many of the major food firms.

Promotion of environmental thrusts will be included in most meetings with State and local officials.

Meat and poultry inspection personnel in all field units will be able to contribute by discussing environmental thrusts with interested civic and industry organizations. They will orient the discussions toward motivating and training others to maintain a clean environment. The training branch will develop visual aids.

The office space and facilities of the Cotton Division at classing offices are rather large. This space, along with mimeograph machines and other equipment, will

be used locally to the extent that such use does not interfere with regular activities of the division.

After proper training, employees of this division will assume leadership and support roles in environmental thrusts policy and programs established by the Department. They will disseminate information from offices and through radio and television media.

The C&MS information division will:

- ☆ Publish appropriate feature articles and other informational materials to explain how C&MS programs contribute to the overall objectives of environmental protection programs.
- ☆ Channel requests for information received by regional information offices to appropriate USDA and other government agencies.
- ☆ Include in publications and materials distributed among C&MS employees information to enlist the support of and participation in activities aimed at implementing environmental protection goals.
- ☆ Serve as a resource point for the Department's Office of Information in its efforts to coordinate an overall information program on USDA's contributions to environmental protection.

Cooperative State Research Service

Cooperative State Research Service will serve in a liaison and advisory capacity to identify research expertise in the States that may be needed for resource purposes in the programs. It will also provide information relative to Environmental Thrust to State experiment stations, and solicit their cooperation.

Economic Research Service

As the social science research component of the Department's program, the Economic Research Service provides information and analysis for use in public decisionmaking on environmental issues and for individual firms in their pollution control decisions. There are currently 23 research projects underway at 12 locations around the country aimed at providing this information. Numerous other projects are being developed.

The research program consists of socioeconomic studies that seek–

- ☆ To determine least-cost means of reducing adverse environmental effects from animal waste, pesticides, crop residues, plant nutrients, food and fiber processing, and sediment.
- ☆ To identify the impact of alternative pollution control practices on producing and processing firms, consumers, recipients of pollution effects, and taxpayers.
- ☆ To analyze alternative financial, legal, and organizational arrangements for implementing pollution abatement.
- ☆ To determine least-cost means of providing water and waste disposal services to communities.
- ☆ To analyze trends and factors affecting population distribution.
- ☆ To identify alternative means of financing adequate rural housing.
- ☆ To conduct economic studies on the demand for and supply of recreation services.

Extension Service

Most environmental problems do not exist solely within a given neighborhood, community, town, county, or State. In the same respect, most solutions to environmental problems do not reside solely within a single discipline, agency, or department. Solid waste removal without an acceptable repository such as a sanitary landfill, or means of recycling, would merely result in changing the location of the problem. Therefore, where a community is to establish realistic priorities, it must maintain its objectivity by involving individuals of varying backgrounds.

The Extension Service, cooperating with land-grant universities, is in a position to bring the broad range of expertise that exists on the university campus to the assistance of the local community.

The following actions used to extend the resources of the university campus to the local community would be similar for each of the thrusts:

1. Develop reading and teaching materials on the local problem based upon local recommendations, standards, laws, ordinances and research results.
2. Assist local groups in organizing to plan and implement the programs such as weed control districts, vector control districts, water districts, sewer districts, recreational areas, community landscape improvement, minimum housing standards, and other related activities.
3. Assist State and local groups in determining their needs for regulations, laws, ordinances, and standards to develop the institutional framework for these environmental thrusts.
4. Assist in a public information program for

understanding regulations, methodology, and selecting alternatives. Assist in guiding local groups in seeking technical, financial and legal assistance to accomplish the programs at the proper time.

5. Assist in developing environmental education programs for these thrusts that will change attitudes, including youth. Youth and the volunteer leaders must be included in the planning and decisionmaking process.
6. Assist housewives and young homemakers, through the home economics program, to better understand the relevancy of these thrusts to the home environment and assist them in developing action programs for their achievement.
7. Utilize Extension communications channels to keep State Extension Services and others informed of developments at the national level that would influence and encourage local action.

Farmer Cooperative Service

The Farmer Cooperative Service can provide a number of effective communication channels for disseminating information on environmental improvement. These include the magazine NEWS FOR FARMER COOPERATIVES, with circulation exceeding 14,000; close working relationships with cooperative editors and information specialists throughout the country; and FCS personnel who have frequent contact with leaders of the 7,500 farmer cooperatives in the country.

The Farmer Cooperative Service will cooperate in every way, within the scope of its authority, to help solve environmental problems.

Farmers Home Administration

The Farmers Home Administration will work with rural development committees, local government groups, and communities to help initiate and carry out a planned environmental program on any subject where it can provide inputs such as loan and grant monies, technical assistance, and other aids associated with ongoing programs.

The Build Our American Communities (BOAC) program, in which FHA is participating with the Future Farmers of America, will provide substantial aid in achieving many of the thrusts proposed.

Practically every State has outlined a Statewide BOAC program. The following are typical of the State programs in which the FFA chapters will be involved.

1. Environmental cleanup and control of water, air, and solid waste.
2. Fire protection, including rural fire departments.
3. Cleanup of roadside areas.
4. Development of recreation programs and facilities.
5. Surveys for housing needs and development of rural housing and rural housing sites.
6. Job survey and rural job development.
7. Community beautification drives.
8. Surveys for rural water and sewer systems for communities.
9. Development of rural health facilities to encourage community safety and aid.

It is important to emphasize that all of these efforts must originate with the local chapter and people. Every community is different and all programs must be adapted to the wants and needs of the community.

Food and Nutrition Service

As the agency responsible for administering the delivery of better food to low-income people and food services to children in school and non-school group activities, the Food and Nutrition Service has a unique opportunity not only to assist in specific physical environmental thrusts but also to foster improvement of the social environment through better nutrition and health.

Through established channels of communications to its own employees, cooperating agencies, and recipients, FNS will make a significant impact.

Plans are already complete for inclusion of nutrition messages on the estimated 400 million food stamp coupon books to be printed in the coming year. They will be issued to 10.5-11 million people each month. These will be alternated with environmental messages.

Consideration is being given to reaching and motivating the 25 million elementary and secondary school children who go through cafeterias and lunchrooms each school day and, through them, their parents.

For families participating in the food stamp and commodity distribution programs, the Food and Nutrition Service prints millions of copies—in English and Spanish—of simple meal planning and menu guides called "Thrifty Family Flyers." These are distributed through both public and private agencies that work with these families. Proper environmental messages will be included in revisions of this series.

In addition, FNS controls the content of a number of other flyers and leaflets, such as those instructing food stamp recipients in the proper and effective use of

their stamps. These, too, are printed and distributed in large quantities, and environmental messages can easily and effectively be added.

By working with the Office of Information, FNS can develop other informational and educational materials for cooperators, program participants, and the general public that will conform to the Department's policy on environmental concerns.

Foreign Agricultural Service

The international organizations staff is not directly involved in domestic programs and so is not in a position to make direct contributions to Environmental Thrust. However, in view of its responsibility for coordination of participation in international organization affairs, it is in position to contribute indirectly to the Environmental Thrust effort by:

(a) Facilitating participation by departmental officials in international meetings and other international organization activities in these subject-matter areas, thus helping to provide access to ideas and developments in other countries; and

(b) Helping to get the United States' best foot forward in international organization circles, thus providing international "show windows" for United States efforts, and, in turn, further facilitating the flow of information and ideas to the United States.

To these ends, it brings to the attention of appropriate officials any meetings, other international organization activities, and documents and publications that may be of interest and use to them. It does a number of things to facilitate participation, when this is deemed desirable by the subject-matter areas concerned.

Forest Service

The Forest Service, within the scope of its authority, will provide active support to communities in helping them solve specific environmental problems.

Technical Assistance. . . . . Cooperating State foresters provide technical assistance to individuals, groups, and communities to help solve a broad range of forestry problems. For communities closely related to national forests, services and assistance will be provided by national forest personnel as well as by the State forester's staff. Additional inputs will be provided to a number of thrusts through Forest Service working relationships with forestry consultants, industrial foresters, the American Nurserymen's Association, and various conservation and forest industry associations.

Youth Conservation Corps. . . . . Public Law 91-378 authorized a 3-year pilot program designated as the Youth Conservation Corps. This pilot program will be administered by the Forest Service in various bureaus within the Department of the Interior. Funding levels permitted the employment of 1,100 youth by each department for an 8-week period during the summer of 1971. These were young men and women 15 through 18 from all economic and social backgrounds. This program should be very helpful in meeting the objectives of the USDA Environmental Thrust.

Work projects will include checking of erosion gullies, stabilizing stream banks, studying animal habitats, planting trees, and many others. These youth will return to their homes as salesmen for Environmental Thrust.

Other Manpower Training Programs . . . . . Forest Service and State forestry organizations are participating in a variety of cooperative manpower training programs with other Federal agencies. These programs include Operation Mainstream, Green Thumb, Neighborhood Youth Corps, Manpower Development and Training, and others.

Enrollees are assigned work-skill training projects that are designed to improve the quality of the environment. Projects include stream improvement, roadside beautification, junk and trash removal, wildlife habitat restoration, and other similar projects. The training programs are designed not only to develop skills while accomplishing needed conservation work, but to develop an awareness of the environmental needs of the Nation. These programs provide enrollees with a better understanding of simple ecological principles and how they relate to environmental actions.

Job Corps . . . . . Civilian Conservation Centers, operated by the Forest Service, will review each vocational training project in view of the environmental protection and improvement. All 20 centers will be encouraged to include in their vocational training plans at least one community project that will involve corpsmen and the community in one of the environmental thrust areas. Environmental education in the classroom will be emphasized and incorporated into the basic education program as far as the Department of Labor Job Corps requirements will permit.

Collateral Support in Watershed Programs . . . . . The Forest Service provides forestry planning and development support to the Flood Prevention Program (PL-534), the Small Watershed Program (PL-566), River Basin Planning, and the Emergency Flood Prevention Program. Each of these programs is supportive

of national policy as outlined by Congress in the National Environmental Policy Act of 1969. Some of the specific thrusts of the outline which can be benefited by the implementation of these programs are safe drinking water, landscape improvement, landscape protection, and land use planning.

A Program of Information and Education . . . . . The Forest Service is now engaged in the first phase of an expanded information and education program.

This initial phase of a multiphase program is designed to train the Forest Service personnel to work in local communities especially with educators who, in turn, work with young people.

Phase 1 . . . . . Utilizing modern field-tested training methods to train additional Forest Service field personnel to work with local educators to (1) improve ecological knowledge, especially about forests and other rural environments; (2) improve ability to utilize outdoor settings especially on public land for learning; (3) upgrade ecological content of curriculum; and (4) improve understanding of economic and other social ramifications of land management.

Phase 2 . . . . . Conduct workshops with teachers involving the above items.

Phase 3 . . . . . Continue to conduct workshops in conjunction with local teachers and other citizens.

National Agricultural Library

The National Agricultural Library will develop special exhibits for display in the library building and concurrent workshops, with speakers and films, interacting with local community groups–business, professional. Special portable exhibits publicizing literature resources of the library might be designed for display in shop windows, and so forth. NAL could participate more actively in Arbor Day and similar national campaigns, and include local groups, such as schools, in its programs.

It could also compile and distribute bibliographies on each program topic. Bibliographies would be based on library resources.

Office of Inspector General

The role of Office of Inspector General in regard to the Environmental Thrust outlines is one of evaluation of agency performance. It will continue to audit their activities and make investigations that are warranted or requested.

Packers and Stockyards Administration

Evaluation engineers of the Packers and Stockyards Administration frequently assist market owners in the planning and design of market facilities. They take into account the need for and recommend the construction of adequate disposal facilities.

Rural Electrification Administration

Some 1,800 rural electric and telephone borrowers of REA funds are in a good position to project action programs into rural communities. REA will furnish to the borrowers through existing channels information material, guides, and suggestions on procedures for any of the thrusts programs, and will furnish advice and assistance through REA field representatives as may be appropriate.

Regular weekly mailings of news items are made to 31 editors of Statewide associations of electric cooperatives. Thrust program items will be included in these mailings, or special mailings will be made.

Soil Conservation Service

The mission of the Soil Conservation Service is to assist in the conservation, development, and productive use of the Nation's soil, water and related resources so that all Americans may enjoy the following:

- ☆ Quality in the natural resource base for sustained use.
- ☆ Quality in the environment to provide attractive, convenient, and satisfying places to live and work.
- ☆ Quality in family standards of living based on community improvement and adequate income.

The Soil Conservation Service gives technical assistance to individuals, groups, organizations, cities and towns, and county and State governments in reducing the costly waste of land and water resources and in putting to good use these national assets. The objective is use and conservation treatment of the land in harmony with its capability and needs.

The objectives of the Service are so oriented that–

- ☆ The Nation's soil and water resource base is protected and improved for the good of people.
- ☆ They are brought to bear on soil and water problems in town-and-country and urban-suburban environs, resulting in gains in environmental quality.
- ☆ They fully support rural development, resulting in increased job opportunities, better facilities, a

more stable economy, an improved scale of living, and a better place in which to live.

- ☆ They take into consideration the needs and purposes of all forms of life.
- ☆ They merit support and citizen involvement on the broadest possible scale, resulting in an effective partnership between city, town, and country.

Within the scope of its authorities, SCS will help community residents improve the environment of their community. Technical assistance is provided to residents living in rural America through the more than 3,000 local soil conservation districts across the Nation. SCS offices are located in most counties and are staffed by technicians trained in the field of soil and water resource development, and can relate these resources to the comprehensive improvement of the community environment.

Statistical Reporting Service

Although the Statistical Reporting Service has no programs directly related to the thrust outlines developed by USDA, it will support these and all Department programs in every appropriate way. To this end, special efforts will be made to inform our employees on these programs so they can help to pass information along in their contacts with the public.

In similar ways, SRS will keep employees aware of their responsibilities and opportunities under Secretary's Memorandum No. 1695 (with supplements) to promote USDA programs for protecting and implementing the quality of the environment.